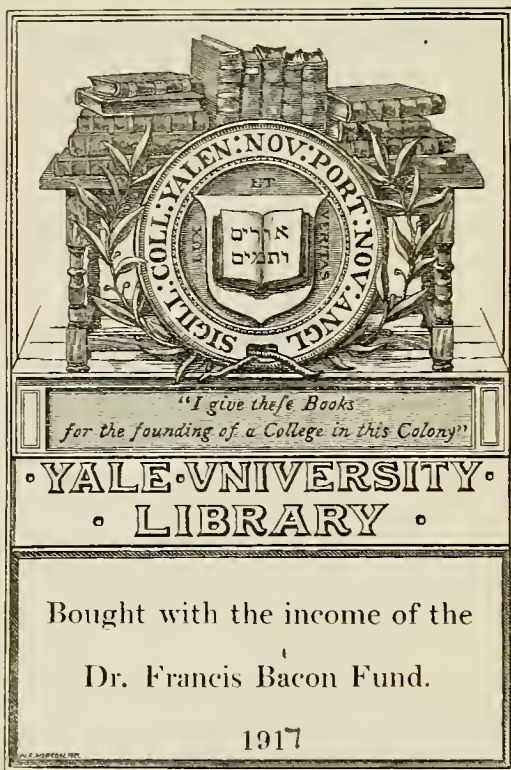


NERVOUS CHILDREN

BEVERLEY R. TUCKER



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NERVOUS CHILDREN



SPASTIC HEMIPLEGIA OF THE RIGHT ARM AND LEG
AS THE RESULT OF A HEMORRHAGE AT BIRTH FROM
SKULL PRESSURE. AN EARLY OPERATION WOULD
HAVE PREVENTED THIS PARALYSIS.

Nervous Children

Prevention and Management

BY

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BOSTON: RICHARD G. BADGER
TORONTO: THE COPP CLARK CO., LIMITED

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THE GORHAM PRESS, BOSTON, U. S. A.

DEDICATED
TO
MY CHILDREN
AND TO
THE CHILDREN OF OTHERS

PREFACE

SEVERAL years ago the author published in the *Dietetic and Hygienic Gazette* a short article, entitled "The Hygienic Management of Nervous Children," and in August, 1910, another paper in the *Old Dominion Journal of Medicine and Surgery*, on "The Hygiene of the Nervous System During Infancy and Childhood." During April, 1911, he addressed the Federation of Mothers' Clubs in Richmond, Virginia, upon the same subject.

The papers as presented and published created considerable favorable comment both from physicians and those interested in the training of children. The author, therefore, feels that the time has come when the subject should be more fully presented. It is his hope that this little book will be read with equal interest by the physician, the school teacher, the mother and the intelligent nurse. Such criticisms as are made in this book are sincere and the result of observation, and he hopes no offense will be taken. We live in an age when many hygienic and educational systems are being tried out and there is no system which can fit each individual case. It is not, therefore, his desire to promulgate any system but simply to give his readers as clear an understanding as possible of the fundamental

principles underlying the rearing of children from a standpoint of their nervous and psychic development so that their knowledge and judgment will lead them not only to understand the child but to train it to avoid the neuro-psychopathic pitfalls which are found everywhere in its path.

In this work the writer has made free use of any book which he thought would be of service to him, and acknowledges his indebtedness to "many men of many minds."

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INTRODUCTION

THE literature upon the hygiene of the nervous system during infancy and childhood is not as extensive as a subject of such peculiar importance deserves. What has been written is scattered through works on the various subjects of heredity, nervous diseases and insanity. Very recently there has been a great advance in the classification and training of feeble-minded children and in the study of the abnormal and criminal child.

Much good has also been accomplished in preventive medicine along dietetic and educational lines by those interested in the development of the bodies and minds of children. It is with hope of calling the attention of these workers, as well as others, to the necessity of careful consideration of what should be the normal nervous poise of a child, in order that they may better fit it to withstand the stress of modern life, that these chapters are written. When we contemplate that upon the development of the nervous system in the child depends most of that child's future happiness and usefulness, and possibly the peace of mind, health of body and the attainments of that child's posterity, through all the ages to come, we may appreciate the importance of its nervous hygiene. When we realize that we move

and think and have our being by the action alone of our nervous system which makes our muscles contract, our brain store up memories or emit ideas and our blood circulate, we may realize the vastness of the subject with which we are dealing. We are just beginning to take a few definite steps to advance the hygiene of the nervous system in childhood at large, and we are awed at the enormous task before us, which includes a change in the whole present idea of rearing children in the home, and the rearrangement of their school and play life.

It has been said that "the education of a child begins one hundred years before its birth." I will paraphrase and say that the nervous status of the child began with civilization, or even before, and that to correct its nervous irregularities we must turn to nature for help rather than to ultra-scientific therapeutic measures. With the defect once established scientific measures are very valuable, but what we are now interested in, however, is to prevent neurotic development by the application of common sense. A child who is neurotic, whether this is inherent or acquired, needs especial management. The organic nervous diseases of childhood will be treated with chief regard to their recognition and prevention.

NERVOUS CHILDREN

NERVOUS CHILDREN

CHAPTER I

THE FORMATION, PHYSIOLOGY AND PSYCHOLOGY OF THE CHILD'S NERVOUS SYSTEM

WE shall of necessity be very brief in outlining the important subjects of this chapter, referring the reader who wishes to go more deeply to the various special treatises and textbooks on anatomy, physiology and psychology. A general idea of these subjects, however, is essential before we can appreciate nervous children.

ANATOMY

Formation of Nerve Cells and Nerves. A cell contains a mass of substance known as protoplasm. This is surrounded by a cell membrane and contains a nucleus which in turn contains a nucleolus. Many cells are so small as only to be seen through a microscope. All life and growth takes place by the faculty of cells to divide and multiply. In the human being a specialized cell from the male, known

as the spermatozoon, fecundates with a specialized cell of the female known as the ovum. This combined cell then divides and the divided cells grow and divide, which process is continued. As this division takes place, the cells begin to specialize and to throw out connections. Some go to make bone while others form skin, muscle, nerve tissue, and so on. The fetus is the outgrowth of the development of the cell, and the child of the fetus.

The nervous system is made up of nerve cells and their prolongations, which receive and transmit impulses. The short prolongations of a nerve cell are known as dendrons, while its more lengthy prolongation is called an axon. There may be many dendrons but only one axon to a cell. The nerve cell with all of its prolongations is known as the neuron. Groups of nerve cells are known as nerve centers. Bundles of axons are known as tracts within the brain and spinal cord, and as cranial and peripheral nerves elsewhere throughout the body. These axons end in fine terminal branches, arborizing with the dendrons of another nerve cell in the brain or spinal cord, or ending in muscle or skin in other parts of the body.

The Brain. The brain is an accumulation of neurons, the cells of which are grouped together in centers to form the gray matter and the dendrons of which form connections with other cells and centers, while bundles of axons form the nerve tracts or the white matter. These neurons are all held together by fine connective tissue.

The brain is folded in upon itself to form lobes and convolutions, and consists of two hemispheres and a portion behind and below called the cerebellum, which is also divided into two hemispheres. The hemispheres of the brain, and also of the cerebellum, are connected together at their bases by communicating fibres. The brain is situated within the skull and is surrounded by three membranes. The center of the brain is hollow, due to its being folded in upon itself, and this open space is irregular and divided into compartments known as ventricles. These ventricles are filled with cerebro-spinal fluid, which also bathes the external brain surface. The brain structure is continued through an opening at the base of the skull to form the spinal cord and the ventricles are continued into a small opening in the center of the cord known as the central canal of the spinal cord. The brain at birth weighs about 384 grams, over 1,400 grams in the male adult and about 100 grams less in the female adult.

The Spinal Cord. The spinal cord consists of tracts of neurons continued from the brain, and of nerve cells and centers. The brain axons end in terminals in the cord, which, however, connect with the cell centers of the cord so that the nerve influence is continued. The spinal cord is also surrounded by three membranes and is situated in the bony canal of the spinal column and has the spinal canal running through its center. The spinal cord is bathed in cerebro-spinal fluid. In adult life it is

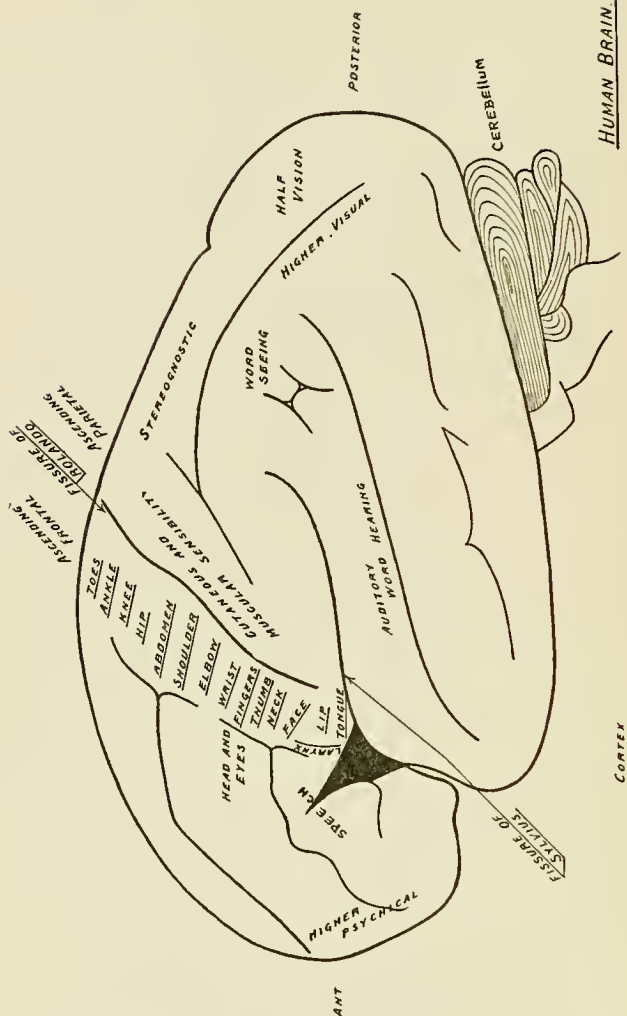


Diagram of Brain, showing approximate location of cortical brain centers.

about 17 inches long. It ends shortly below where the last ribs join the spinal column, the distance varying according to age from about one to several inches.

The Nerves. Coming off from the brain and leading chiefly to various organs of the head and face are twelve pairs of cranial nerves. Coming off from the spinal cord are thirty-one pairs of nerves supplying the skin, muscles and other structures of our bodies. These, with their branches, are known as the peripheral nerves. Another set of nerves known as the sympathetic nerves run in ganglionated chains on the anterior aspect of the spinal cord. They also continue up into the brain. These sympathetic nerves supply blood vessels with nerves. The accumulations of nerve cells on this chain are known as ganglia. In supplying the various parts of the body, nerves divide into branches and collect together in places to form plexuses.

PHYSIOLOGY

The function of the neurons is to carry impulses to and from the brain. The *sensory impulses* ascend from the skin and mucous membranes through the sensory nerve fibres to the ganglia, or groups of cells, on their roots just before they enter the spinal cord, and are carried through the posterior columns of the cord by a series of neurons to their centers in the cortex of the brain, where they are appreciated as sensations. These sensory centers

are connected by neurons with motor cortical cell centers. The *motor centers*, situated also in the cortex of the brain, send descending impulses through the anterior columns of the spinal cord by neurons whose axons by their terminals connect with cells in the anterior part of the spinal cord. Here other neurons begin which leave the cord at different levels by anterior nerve roots and form motor nerves whose axons terminate to supply motion to various muscle fibres. For instance, if we touch a hot stove with our hand an impulse travels up to the cortex of the brain through the sensory neurons where the sensation is appreciated. These sensory cortex centers are connected with the motor cells or centers which send down an impulse through the motor neurons to contract the muscles so that the hand is removed. There are other functions, such as the appreciation of the position of our limbs, the appreciation of weight by our muscle sense, etc., which are complicated and cannot here be described.

The function of the brain will only be spoken of in a few of its essentials. The anterior or front part of the brain has to do with intellectual development and here are the higher psychic centers. On the sides of the brain cortex are the centers for motion and sensation, while lower down than these are the centers for hearing, word appreciation and writing. The posterior lobes of the cortex contain the centers of vision. Most of the vital centers and centers of the cranial nerves are deep within

the brain near the base. The cerebellum is the chief organ of co-ordination of movement.

The function of the spinal cord is to receive through its neurons, which form its posterior columns, impulses of sensation from the body, and

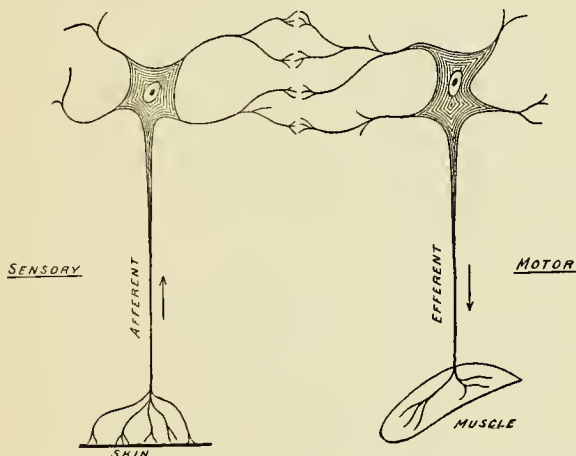


Diagram of a sensory and a motor neuron, showing direction of impulses and their transmission through dendrons.

from the anterior columns, formed by the motor neurons of the brain and cord, to send out the nerve impulses of motion. The spinal cord also has certain centers which have to do with bladder and rectal control. It also has other functions more or less complicated; for instance, trophic control, which has to do with the nervous influence regulating the nutrition of parts.

The function of the nerves of sensation and motion is to supply the skin and mucous membranes with sensation and the muscles with motion and to aid in keeping up their nutrition. The function of the twelve cranial nerves is to supply the sense of sight, of smell, of taste and of hearing; to supply motion to the muscles of the face, eyes, throat and tongue; to supply sensation to these parts and through the pneumogastric nerve to supply sensation to the stomach and to regulate the heart action and respiration to some extent. One of the cranial nerves, the eleventh, helps to enable us to elevate the shoulder.

The function of the sympathetic nerves we know too little about, but we know that they have to do with the regulation of the heart, with the regulation of the tone of the blood vessels by making them contract and dilate, and that they exert an influence upon the glands and viscera of the body.

PSYCHOLOGY

Following chiefly Professor James, we will say that psychology is the explanation of consciousness; that is to say, the explanation of such things as sensations, emotions, reasonings, desires, judgments and many other attributes. It explains the things we learn as these come through our outer relation and are stored up and associated and become responsible for our thoughts and actions. As an example of a

psychological process, a baby sees an orange and learns by degrees that it is round, has weight, is yellow, its peel is bitter, its taste is good and it is full of juice. Afterward, he desires an orange and delights in getting it. He begins to compare, and says such and such a thing is as cool and juicy as an orange, or as round as an orange, or the size and weight of an orange; in other words, he soon has *knowledge* of an orange.

Sensations. Various sensory nerve fibres have different functions and are only affected by certain stimuli. Thus, the optic nerve, the nerve of sight, is not affected by sound waves and we cannot hear with our eyes, nor taste with our skin nerve terminals. Practice and talent can make these special nerves more highly sensitized than in the average individual. Thus, certain people through highly organized sight and touch can engrave the Lord's Prayer on a gold dollar, others can tell different grades of tea by taste, others can distinguish sounds afar, while others who are blind can tell grades of cloth or read raised print through their touch, by what is known as perception.

Perception. When sensations are interpreted we call the result perception. For instance, in certain conditions a sensation can be felt as something, but without perception it cannot be understood, for example, as sharp or dull. Normally we can perceive that a pin is sharp at the point and dull at the head. We can tell by perception from the feel or sight

that an object is round or square or that a thing is sticky or smooth, and so on.

Sensations and perceptions are immediate and present. After they are past they are stored up in memory and become more vague. Imagination, thought and recollection may bring them up again. Many sensations and perceptions are complex; thus, if an orange is dropped into our hand when we have our eyes closed we feel that it is round and cool and has a certain weight. This occurs through our tactile, thermal, muscular and joint senses.

Memory. Memory is the knowledge of a thing or fact which has been dormant or subconscious in our minds. When we recall and rehearse it in our minds it becomes recollection. When we take these memories and compare them, making a train of thought leading toward deductions, we are reasoning, and if these reasonings lead to discriminations we have judgment. Attention is fixing the mind, that is, our train of thoughts, on certain things. Thus we narrow our consciousness to the matter in hand. Conception is the formation in the mind of an idea or notion from facts, events and things. Imagination is the re-combination in the mind of sensations and perceptions till they appear fanciful. Thought is the act of meditation, and meditation is bringing up to consciousness mental impressions.

Will is the power of choosing with desire, volition and determination. Habit is caused by our nerve impulses going through certain pathways by association of sensations, memories, reasonings,

judgments, will, etc. A habit once formed tends to keep up, and the effect our habits have on us in our adaptation to our environment, and on those with whom we come in contact, has much to do with our status, that is to say our limitations and capabilities. Habits may be broken, or one habit may be replaced by another, or new habits made because we are susceptible in regard to impressions on our nerves and nerve centers. We can be influenced by our own will or by the will of other people or by circumstance. However, habits may be so fixed that they diminish our attention to our performances of certain things until they become almost automatic and we are scarcely conscious of them.

An emotion is a state of mental feeling in which forms of excited sensibility are expanded and strengthened by the admixture of various peripheral or organic sensations. In other words, it is a mental feeling-complex. Most emotions may be traced to three primary emotions, fear, anger and desire. Complicated emotions may grow out of these, as terror out of fear, malice out of anger, and ambition out of desire. Many emotions are formed by a combination of these and other emotions.

In this chapter we have been very brief, and very superficial, but we have tried to lay a foundation of certain knowledge which will aid in the proper conception of some of the things to follow.

CHAPTER II

HEREDITY AND ENVIRONMENT

HOW much the attributes of our character and personality, both normal and abnormal, are due to inheritance and how much to environment is a hard question to answer. Characteristics often considered truly inherited, as, for instance, a talent for music, are so clearly affected by early association that it is difficult to say how much is inherited and how much acquired.

HEREDITY

Professor Adami says that the only conditions which are capable of being inherited are those which have told upon the nuclear material of the germ cells of either parent prior to or at the moment of fusion. Therefore, from the standpoint of histological anatomy, everything acting after this moment of fusion, that is, after the moment of conception, is considered acquired. He further divides conditions truly inherited into four classes: specific, racial, familial and individual.

Specific inheritance is shown by the law that features longest possessed by a given stock are the ones most impressed upon that stock and the least easily

lost. For instance, a large, peculiarly-shaped nose may have been a characteristic of a certain family for generations. If this characteristic has been the one longest possessed by this particular family it will be the feature least easily lost.

Racial inheritance is too broad a subject to be attempted here except to point out that emigration modifies it to some extent, and I believe this is most true of those characteristics affecting the nervous system. For instance, the characteristics of the Jewish race, although marked in this country, are, however, somewhat modified. This modification is more apparent in certain changes in their personality than in their appearance. The burden of oppression being lifted, Jews are less subservient, less subject to hysteria and neurasthenia, more generous and less orthodox in their beliefs.

Familial inheritance is also a broad subject. We are all acquainted with the frequency of an hereditary similarity of form and feature. In families there is every reason to believe that this similarity may extend to the organs of the body and that the brain, liver, heart, lungs and other viscera, the bones, muscles, nerves and even the blood may be characterized more or less by this similarity. Also certain intellectual and other characteristics are, as we all know, frequently family traits.

Individual inheritance includes, of course, all of the above classes but, at times, conditions peculiar to the parent as distinct from the family may appear in the child, and a property not observable in

either parent may be seen in the child. The latter is ascribed by Adami to the interaction of the two parental germ plasms.

It is indeed fortunate that but few diseases are really inherited. These inherited diseases, or better conditions, are usually due to some malformation either gross or microscopical. For instance, a spinal cord disease known as Friedreich's ataxia is considered inherited and is due to the fact that certain cells in the spinal cord are never properly developed. Feeble-mindedness and idiocy are due to under-development or non-development of brain tissue. Even sick headaches, which are often seen in certain families, are probably due to abnormal brain cells, this abnormality being transmitted from parent to child. Apart from conditions just described, predisposition to disease may be inherited; thus a tuberculous mother may have a frail child predisposed to contract tuberculosis.

It is a well-known fact that certain diseases produce substances in the blood known as antigens or antibodies, which render the patient more or less immune. These antibodies are probably in some instances transmitted from the blood of the mother and may render the child less susceptible to certain diseases. A few diseases may be directly transferred from parent to child and the most important of these is syphilis. A syphilitic mother may have a child born with active manifestations of this disease and a syphilitic father may propagate certain toxins or poisons in the cells of the child which cause

mental or physical changes in that child. It is even considered by some that the germ of syphilis itself may be transferred in this way.

Certain chronic conditions, often due to improper hygiene and nourishment in the ancestors, may give to the descendants arteries which harden early, kidneys and livers which functionate improperly and hearts in which the tone is not normal.

Mental caliber, artistic and scientific tastes and talents may be inherited, due to development of certain brain centers and convolutions. Emotional tendencies as fears, dare-devil bravery, morbid or cheerful dispositions, easily provoked laughter and tears, are probably the result of association, although an inherited instability of the nervous system may have a bearing upon most of these. It is perfectly conceivable that neurotic members of a neurotic family have inherited an underdeveloped or improperly developed nervous balance.

An inherited lack of development of the higher centers as a whole may cause such so-called functional nervous diseases as some of the insanities, hysteria and the psycho-neuroses. Certain organic nervous diseases, as family muscular atrophy or family juvenile paralysis, are due to lack of development or premature atrophy of certain groups of cells, which lesions or anomalies, according to Adami and other authorities, are inherited. Diffuse underdevelopment of brain cells and centers may be inherited and result in such conditions as criminal tendencies, feeble-mindedness and idiocy.

Little or no attention should be paid to maternal impressions while the child is "in utero" as being the cause of maimed or deformed children. No sight, however horrible, can be impressed upon the developing fetus, as it would be entirely against all the laws of embryology and biology. Mothers who are known to have gone through the most harrowing and distressing experiences give birth to perfectly normal children, and the children born in times of massacres, wars and persecutions are as normal as those born during the "piping times of peace." When the converse is true and a monster, a maimed, a marked or a neurotic child is born of a mother who has received a shock during pregnancy, the character of which is of no consequence, the child's condition may always be ascribed to coincidence.

The taint of a bad heredity can hardly be appreciated. With its stealthy blighting hand it stigmatizes the human race for generation after generation, finding its way into every class of society, sapping the life blood of nations and putting a burden upon the fit which they are hardly able to bear. A great proportion of humanity is thus stigmatized and complete regeneration can only take place through prohibition of the marriage of defectives and the proper control of the defective classes when young. If we count back, for instance, our grandmothers for twenty-two generations, we will find that we have received an heredity influence from more than 2,000,000 females. This simply gives

an idea of how closely the human race is related. Many families have been investigated in which there have occurred hundreds of defectives who have been absolutely dependent upon municipal support either as paupers or criminals, and who have cost their states millions of dollars in a few generations.

ENVIRONMENT

With the above brief insight into heredity we may approach the influence of environment in the development of the nervous characteristics of the child. Bearing the nervous system especially in mind, we may be led to believe that a nervous child born of a neurotic family, may, by change of environment, or what amounts to the same thing as far as the child is concerned, by bettering its environment, become less nervous. It is probable that a new-born babe of Norway if taken away from its parents to live in Italy would modify many of its inherited traits in this new environment. Just as the fair skin would become darker, the stolid bearing would tend to become flexible; thriftiness would probably be lost and it would become more emotional, more artistic, more graceful, more easily excited and perchance more neurotic.

A child comes into the world with its plans for existence drawn by heredity; in the dry dock of environment it assumes certain characteristics and these depend much upon the material used and the influence of the builders. A ship built in Japan

by the same plan of one built in England would contain different wood, steel and even paint. In other words, although the same plan was followed, some Japanese characteristics would be worked into it. The fitness of the ship might be further altered by the builders of either country putting in here and there a bad piece of material or even wilfully destroying or changing some of the specifications of the plan, all of which would affect its sea-worthiness. So, with the child, disease might destroy a part of its fitness, gnarled and warped ideas imbued from those in charge of its rearing might change its plan and an individual destined by nature to battle with the storms and stand the stress of life may, because of environmental circumstance and influence, be rendered unfit.

The infant of a few weeks of age whose parents begin to feed it too often, handle it too much and keep it in an atmosphere of indulgence and excitement, is liable to become the nervous child and the neurasthenic, hysterical or perverted adult.

All important is the observance of regular hours of feeding, sleeping and of bathing. The infant should be changed as soon as it has soiled itself and its position should be comfortable. As early as possible it should be trained to rectal and bladder control. Over-attention or lack of attention, too much noise or too much silence, too much or too little light, have to do with the development of the infant's nervous system. It is natural for a child to cry a certain amount; but it is wrong for it to cry

and fret long periods of time. One of the most puzzling things to young mothers is to know what to do with a child in a crying spell. It is hard to tell which is the worse mother, the one who lets the child "cry it out" or the one who "cries it out" with the child. The only superior of either in badness is the one who gets the soothing syrup and buys an hour of peace at the price of the child's future intellectual development. Happy indeed and wise too, is the mother who has been blessed with, or who has acquired, the knowledge of the trick of diverting the child's attention, and who, after assuring herself that the child is not sick, uncomfortable or hungry, with the calmness of her presence, the rhythmic movement of her body, and the enchantment of her voice lulls the child to contentment.

The single child of its parents, born in a three-room apartment on the seventh floor of a building, has not as much chance to be morally, mentally and nervously normal as has the little brat of a larger family, born in a cellar and reared in a back street. The stress of modern life is frequently accompanied by irritability in the parents, haste in their family duties and meals, nervous explosions, and impatience with the child, all of which make a profound imprint upon the childish mind, and instead of learning the homely virtues of control, patience, endurance and obedience, it is directly taught to be neurotic, unintentionally let us hope, by its own parents. With about as much regularity as a

child absorbs the religious faith and political beliefs of the family in which it is born does he or she absorb the family nervous equilibrium.

The environment, then, of a child consists of the surroundings in which it is reared. The good or baneful effect of this environment does not depend upon the poverty or wealth of the parents except that the child of moderately well-to-do parents has the best chance in that it neither suffers from deprivation or over-indulgence. The child with brothers and sisters is far better off than the only child because it has less time for self contemplation, has to stand up for its rights, absorbs a better idea of human nature, learns to give and take, becomes less self-conscious and is usually less idolized. Sensible parents, general hygiene, the proper religious influence, light, air, exercise, regular hours, companionship, healthy morality and good schools, with plenty of play time, go to make a good environment.

We are all nervously active from the experiences gained by external stimuli through cerebral association fibres connecting various groups of cells or centers. If the stimuli are too frequent and too strong an over activity, frequently followed by exhaustion, ensues. In children nervousness, peevishness, incorrect development of judgment, of reason and of action, psychoneuroses, improper tendencies and chronic nervous exhaustion may be the outcome of the psychic trauma of these stimuli.

The ideal environment for children so far as

their nervous systems are concerned is in the country or near the country, among phlegmatic and happy people, where they may attend good schools with small classes taught by those trained in psychic and nervous hygiene. There should be ample playtime and short study hours. The lessons of nature should be naturally learned under trained guidance rather than taught on the scientific scale of the kindergarten in rooms and small back yards. Some such environment will soon or late be attempted in institutions where children of neurotic families may be sent to escape the pernicious influence of their only excuse for a home. Whether the home be a costly mansion or a "two room and bath" flat, it is not the place to bring up children if a nervous atmosphere pervades it.

The subjects of heredity and environment will be mentioned frequently as we proceed, especially in the chapter dealing with the training of nervous children.

CHAPTER III

THE NERVOUS AND MENTAL DEVELOPMENT OF THE CHILD AND ITS PERSONALITY

TO get a general conception of the normal nervous and mental development of the child, we shall very briefly trace this development from the time of the fusion of the parental germ cells to puberty.

Embryology. The human ovum is the germinal cell of the female and is about $1/125$ to $1/150$ of an inch in diameter. It has a nucleus, protoplasm, and is surrounded by a membrane. When impregnation takes place this cell is pierced by the male reproductive cell which is known as the spermatozoon, which is also microscopical in size, elongated and larger at one end, and it fuses with the ovum which it pierces. From this moment conception begins.

This fused ovum then divides into two cells and each of these into two, and so on. The cells as they multiply arrange themselves into two layers and then into three. The most inward layer of these cells is known as the endoderm, the next as the mesoderm and the outer layer as the ecto-

derm. From the endoderm is derived the epithelium of the alimentary canal, of the ductless glands and that of most of the body cavities. From the mesoderm is developed the skeletal bones, the muscles, the blood vessels and generative organs. From the ectoderm is developed the skin, the nervous system including the brain and spinal cord, and the linings of the organs of special sense. The fetus thus developed comes to birth at full term at the end of nine months.

Infancy. Infancy embraces, medically, that period reaching from birth until the child is two years of age, at which time the first dentition is about complete. This period of infancy is characterized by very rapid growth and development.

At birth the brain is large in proportion to the body weight, but the anterior lobes and the cerebellum are comparatively undeveloped. At birth the brain is about $1/6$ of the body weight, in the third year $1/8$ and in the adult $1/43$. The color of the brain at birth is pinkish white and the gray matter is not found on the convolutions until about the end of the first month. In the new-born the spinal cord is really better developed than the brain.

The first movements of the child are largely reflex and consist of breathing, swallowing, coughing, crying, inco-ordinate movements of the hands and feet, and sucking. The special senses are but poorly developed, possibly smell and taste being somewhat developed from the first. Infants are deaf when born and they do not hear well enough

to turn toward noises until about the end of the third month. At birth they are also practically blind, except that they can distinguish light from darkness, and their eye movements are not synchronous. At about the sixth week the baby will follow with its eyes a bright light but it does not close its eyes upon the approach of an object until the third month. Some sense of touch may be developed, especially in the fingers, during the first month, but distinction between rough and smooth, heavy and light and the variations in form are not appreciated until the general mental development is considerably advanced.

The infant usually begins to grasp objects voluntarily between the third and fourth months. By the end of the first year speech is enough developed for it to use monosyllables. A few words, for instance, "Mamma" and "Papa," may be spoken some months before this. Girls usually talk earlier than boys. The baby at three or four months of age begins to recognize its mother.

Infants should be gradually weaned, and babies on cow's milk given other food-stuff in addition, when about one year of age. The infant's skin is thin and it is very susceptible to weather changes. Its body should be well protected, and it should be comfortably clothed with soft clothing as the skin is exceedingly sensitive. Regular actions of the bowels and kidneys should be induced and the baby should have plenty of fresh air. Infants have a

tendency to a rise of temperature with slight provocation.

When the baby is born it should be carefully examined for all deformities. A child may be born with an imperforate anus or an adherent prepuce which may be overlooked during the first few days of life. Any anomaly, or gross or minor deformity, should be noted and the attention of the physician called to it. Forceps injuries or skull depressions should be carefully looked for and if the child's head is unusually large or unusually small it should attract especial attention. A regular record should be kept of the weight of the child under the direction of the physician. Premature children, of course, require more protection than those born at full term. The anterior fontanel should close during the second year, and the posterior at the end of the first year.

Childhood. The period of childhood is said to extend from the age of two years to puberty. At two years of age the child's head averages nineteen inches in circumference and muscular co-ordination is fairly well advanced. The child has stored up some memories through experiences and reasoning begins. The normal child during the waking hours is rarely motionless. The brain, spinal cord and nerves develop rapidly and the nerve cells become more numerous, more mature and their associations and connections through nerve fibres are established. Puberty may be said to occur in girls from twelve to sixteen years of age and in boys

from fifteen to seventeen years of age, and is that period of life during which the characteristics of the child disappear and the characteristics of the adult are attained. During this period of childhood progressive mental development occurs.

In early childhood the skin is still sensitive and the child should be warmly and comfortably clad but not overheated. The eruption of the permanent teeth begins during the sixth year and continues through childhood. Irregular teeth and decayed teeth should be carefully noted and the advice of a good dentist frequently sought. During the period of childhood the muscular and skeletal development of the girl are such that she can take practically the same exercises as the boy, and if this is recognized her physical development will be much enhanced.

Mental Development. As Bain has pointed out, the normal child loves activity and likes to be occupied but lacks the power of continuous application. A variety of sights and noises appeals to the child. It acquires likes and dislikes for food. It likes patting, rubbing and bathing. Its sense of smell is well developed. The child is inquisitive, destructive, imitative, imaginative, credulous, observant, sociable and sympathetic. During this period "it is strong in memory but weak in judgment."

The child is emotional, easily brought to tears but in turn easily diverted to laughter. It is egotistical though not self-conscious, and easily de-

velops prejudices and fears. Intellectually, it is discriminative, which is shown by memories, fancies, susceptibility to reasoning and intuitiveness.

During the period of childhood much of the time is occupied by school life. The old methods of education, consisting of long school hours, hard and tedious lessons, over-discipline, corporal punishment and the system of keeping the child in and giving it long monotonous sums have been, fortunately, almost dispensed with. Modern school life, with its shorter hours, periods of recreation, good school hygiene, more individual instruction, stimulation of interest and many other things, will be of tremendous advantage to future generations.

To educate the child properly, it must first be interested and then we must observe the natural unfolding of the child's mind. We should not try to drill a thing into the child's head but help the child acquire it. Its physical health should take precedence of its education. Spencer has said: "The first requisite to success in life is to be a good animal," and while there are exceptions to this rule, in the main it holds true.

Almost all knowledge is at first pleasurable to the child, and as the wish and the will are developed they obtain that knowledge which gives a sense of satisfaction but which may not be so pleasant. As the child gradually gains control over its motions, emotions and speech, the acquirement of knowledge keeps pace with the requirements of school life and then competitiveness and ambitions act as fur-

ther incentives. Impressions during early childhood are fleeting and inaccurate but they may be recalled and corrected, and accurate repetition tends toward perfection.

In all education, whether of the muscles as in acrobats and athletes, or of the complex in which movements and special sense come into play, as shown by sleight-of-hand artists and musicians, or in the acquirement of knowledge for business or professional life, the basis is a correct impression frequently repeated with the stimulation of the interest and ambition of the child and the competency of the teacher, all of which may be summed up as training.

PERSONALITY

In dealing here with personality we are speaking of that inherent individuality which may attract or repel or pass largely unnoticed within the limits of what may be called normal. Personality embraces to a certain extent appearance, mannerisms, accomplishments, racial and familial characteristics, emotions, affection, and certain actions, especially involuntary ones.

We speak of a person as possessing an attractive or a repulsive, a strong, a weak, a lovable or a cold personality. Sometimes we cannot be so definite, and we say such-and-such a person has a splendid, a wonderful, a beaming, a lofty, a saintly, a broad or a narrow personality. These charac-

teristics are used even to distinguish certain well known characters, and we have heard of Richard the Lion-Hearted, Frederick the Great, Mary the Saint, Charles the Bold, Hugh Capet (the stubborn), and others.

The recognition of personality begins in early life and none are so quick to distinguish different personalities in children as children themselves. We have often heard them say: "James always has a grouch," "Mary is our pet," "Everybody likes Sam," "Alfred is a sissy," and "Sue is a tom-boy." Thus often one word aptly applied will depict an individual's personality better than a long description. Personality embraces disposition, individuality and distinctiveness, but no one of these attributes alone describes it. Everyone, of course, possesses personality, although it is often inconspicuous. The personalities which are so unusual that the individual is spoken of as eccentric, odd or peculiar have overstretched the boundary line of what may be considered normal.

The causes of the variations of personality are numerous. Heredity may be a strong and is probably the strongest factor. Variations in the activities of certain ductless glands has much to do with normal as well as abnormal personality. Climate has its influence, as does education, custom, environment and superstitions. Personality may be developed or submerged by circumstance, education, discipline and association, but it cannot be oblit-

erated permanently because it is inherent and it exudes.

It is difficult at times for persons of one type of personality to understand those of another type, and the correct interpretation of a child's personality has much to do with its training from a nervous standpoint.

CHAPTER IV

HABIT

WE have said that one lives and moves and has one's being by the reaction of the nervous system to external stimuli through cerebral associations. It is also a fact that memories are stored up in the brain and the repetition of the same stimulus along the same conducting paths makes these memories so vivid and the reaction so easy and rapid that the mental working mechanism becomes almost automatic. Hence, environment has much to do with habit and many habits are formed through imitation of the actions of those with whom we are thrown in contact. There is, however, another influence in the formation of habit, which is deeper and more powerful, and this is the heredity influence of similar actions in many generations of ancestors.

Let us endeavor to illustrate these things by some simple examples. A child may have the habit of picking its nose, which might be due originally to an abrasion on the inside of the nose. The sensation derived from picking is almost irresistible because it has been stimulated so frequently that it practically demands repetition, so that, although the

original sore may have disappeared entirely, the habit is formed. This would be reaction to the external stimulus of the abrasion in the nose. Another child instead of picking the nose may twitch and "work" the nose so as to alleviate the itching from the abrasion, and the habit of twitching the nose is formed and continued as a habit-spasm or "tic" for years.

Another child might see the first twitching its nose and imitate the movements and derive a certain amount of sensory satisfaction from the procedure and contract a habit-spasm or imitation tic.

We see examples of the ancestral influence in various trades. Engravers, watch-makers, or even lawyers and doctors often come from ancestors who for generations have followed the same calling. This does not only mean that environment induces them to do what they see their fathers do, but it means also that it is easier for them to do it because their ancestors, having performed similar acts for successive generations, have developed brain conformation and nerve conductivity which may very conceivably have passed on to the descendants.

Inheritance has a still further influence in that the defective, the child mentally below normal, has less inhibitory power, less judgment to ward off the end results of certain habits and less will power or desire to break an evil habit already partly formed. They are also more susceptible to the formation of bad habits. Thus, we trace the influence of a bad heredity in alcohol, morphine and other

drug habitués and those addicted to disgusting or perverted habits.

Bad habits may at times be the expression of a mental state as a symptom of that state. In dementia præcox we have often certain destructive habits, as tearing the clothes, in which the patient seems to gain some morbid satisfaction, not only in the muscular exertion but also in the sound of the ripping. Automatic actions shown in clapping the hands or spitting and in other ways may be habits of those afflicted with this form of insanity. To a large extent we are all controlled by habits, but when these habits, whatsoever they are, become so conspicuous as to attract such attention that we do not fit into our environment then they become psycho-pathological.

Our special senses, touch, hearing, taste, smell and sight, enable us to take our place in our environment and attract that which is agreeable or useful and repulse that which is disagreeable or undesirable. There is an "accounting for tastes" if we only go deep enough to account for them. There is even an accounting for perverted tastes.

Useful and good habits are essential. Should one be able to resist habit formation successfully that person would be of very little use in the world. He would also be most uncomfortable. He could not bathe regularly, or wear the same sort of clothes, or have his coffee for breakfast, or go down town by the same route, or follow the same occupation, or shake hands with his friends, or even

sleep in a bed each night. In truth, habit formation is most useful, and the adaptability toward habit formation makes the specialist. An engraver becomes expert through habit, and trained habits make the surgeon, the chest examiner, the juggler, the tight rope walker and all the horde of people engaged in special endeavor.

WHAT HABIT REALLY IS

Then when all is said and done, what is habit? *Habit, both good and bad, is the expression of the desire of the individual, according to his light, to better his condition.* This statement, when superficially considered, may seem false or fantastic, but reflection will show us that it is neither. We form good or useful habits because they give us certain satisfaction. We bathe habitually because it gives us a sense of refreshment and cleanliness. We take a certain route because it is convenient and easiest, because we avoid circumambulation or a rough pavement, or we are apt to meet friends and thus make ourselves more comfortable. We read the paper to keep abreast of information, we form certain habits of dress so as to make a good impression, we brush our teeth to keep them from decaying, and so on. One way or another, each harmless or good habit is selected and persisted in to make our lives more respectable, more comfortable, easier, or to enable us to accomplish desirable objects.

So far so well, but how have harmful and evil habits the same object? The answer lies in the individual's judgment as to what will make him happier, feel better, his life more easy, or help him accomplish his desires. The drunkard and the morphine habitué lack something inherently. They want to feel better, to work better, to drown sorrows or to become oblivious of their annoyances, and through lack of judgment they select, or through coincidence they hit upon the thing they think will produce the desired state. Environmental misfits are never satisfied with their lot. The minor bad habits have the same cause. If a boy felt normal he would not pick his nose. He does so because he thinks it makes him feel better.

Accepting this view, the correction of bad habits becomes in one way simple and in another intricate. The simple part is to recognize the bad habit, to tell the offender what it is and to determine to supplant it with a better habit or habits. The difficult part is to lessen the nerve tract influence the bad habit has made, to select something good to take its place which will be equally or more satisfying to the individual, and to get his co-operation.

There are many and diverse ways, for instance, of taking whiskey away from a man, but what is accomplished if we leave him with the same craving and a nervous wreck who will begin drinking again as soon as the opportunity presents itself? More frequently, he will even seek this opportunity. Really to correct the trouble, we should first give

him medicine to lessen the nerve tract influence of the alcohol, then select a treatment which forms good, regular habits of sleep, food, exercise, amusement and occupation, which will satisfy him better than the alcohol did. Then certain useful ambitions and desires have to be instituted and the patient should be shown how to form good habits which will accomplish them. The subject is broad and we have here dealt in generalities. A few of the undesirable habits of children will, however, be mentioned briefly.

The Crying and Fretting Habit. Much crying and fretting in young children is due to a diseased state or to some article of clothing being uncomfortable, but many children when these things are absolutely eliminated cry and fret from habit. The cause is usually indifference or over-indulgence on the part of the parents. We must remember that crying is the language of the very young child and if its desires are not attended to it has no other recourse. The mother or nurse may not heed its cry or fret and the child continues until at last attention is attracted. Soon or late the habit may be formed and the child cries and frets without reason. It has become accustomed to crying and fretting and it derives a morbid satisfaction from it, and it becomes an easy thing for it to do.

On the other hand, parents may over-indulge a child and the child cries to have what has been refused until the parent gives in. Finding this a safe

and sure way of accomplishing its objects, the child soon forms the crying and fretting habit.

The treatment for the child who has lacked attention is, of course, to pay attention to its ordinary wants. The treatment for the indulged child is not so simple. Harmful things must be refused, a reason should be given for the refusal, the child's attention should be distracted and it may sometimes be given something as a substitute which is harmless.

The truth of the matter is we have to treat the parents and if they can be taught that a child needs ordinary attention, or that over-attention, over-indulgence and impatience are wrong, and that the adjustment of these things will correct the child, we have gone a long way. The parents should also know that inattention to their children makes them careless and indifferent to the order of the household and of school and later of society, and that these children may become wanderers, profligates or criminals. They should know that over-indulgence of children not only makes them "cry babies" but often selfish, immoral, lying and thieving adults.

Obedience is the prime law of childhood and insistence upon it early saves much trouble and embarrassment to both the parent and the child. One of the most obedient children I know was made so by the mother "fighting it out" with her when the child was a little over two years old. The child put some trash on the drawing-room floor and the mother told her to pick it up. The child re-

fused and the mother insisted. The child lay on its back and cried and screamed. The mother told her the reason why she was not to litter that particular floor and continued to insist upon the child picking up the trash. These two wills combated each other for two and one-half hours, when at last the child yielded. It was a victory for both mother and child, and the best thing about it was that the child was not whipped.

The Habit of Bed-wetting. This troublesome condition is not often a habit, although it may be. When it is and all pathological and nervous causes are eliminated it is usually broken by stimulation of the child's pride, reasoning with it and waking it up to urinate several hours after it has retired. When bed-wetting is not due to habit pure and simple the child should be taken to a physician.

The Habit of Thumb Sucking and That of Using Pacifiers. These habits are not only unnecessary and disgusting, but dangerous, and the parent or nurse is nearly always responsible for their formation. The child puts its thumb or fingers in its mouth and sucks in imitation of the nipple, or the ignorant or indifferent mother puts in its mouth a pacifier and the child goes to sleep or is kept quiet. This is repeated, and the influence is started along the nerve paths and the habit is formed. Soon the child cannot be made to go to sleep or to be quiet without sucking something. The habit is dangerous because the child gets so much satisfaction from this that it feeds irregularly or not in sufficient

quantity; the sucking movement continued so constantly gives the child protruding teeth, deformed mouth and lips and adenoids, and in consequence impaired health. The most dangerous thing of all, however, is that its *thumb or its pacifier cannot be kept clean* and it frequently acquires dangerous diseases by the direct transference of germs to its mouth. Regular feeding hours and force of will on the part of the mother and nurse are the best means of breaking these habits. Remember that if the mother allows the child to continue a habit of this sort and the child gets the germ, let us say, of tuberculosis on its thumb or pacifier and infects itself and dies of tuberculosis, even years afterward, the mother is responsible for the death of the child because it is irresponsible and she is its natural protector.

The Habit of Biting the Nails. This is frequently begun by biting a hangnail, or from imitation, and often continues through life. It is essential to keep a child's nails cut and clean, and hangnails treated. What has been said of the thumb sucking and pacifier habit applies to this also. It is occasionally necessary in any of these habits to resort to such procedures as putting quinine on the fingers, or even sewing the sleeve over the fingers.

The Picking Habit. Children are naturally great pickers. They pick scraps of paper and cloth to pieces, they pick lint, pick at your clothes, pick up objects and put them down, they pick their noses and pick sores. When picking at some particular

thing becomes a habit it should be corrected or, better still, the formation of it as a habit prevented. Any irritating focus should be treated and removed if possible. The child's pride should be stimulated. One little boy who picked up every object in the room stopped when told by his mother that the Bible said "Keep your hands from picking and stealing" and that picking was the forerunner of stealing. This was certainly stretching a Biblical quotation.

The so-called habit of eye blinking and grimacing is usually due to disease and a child so afflicted should be taken to a good physician. These movements are sometimes associated with chorea, or St. Vitus' dance, sometimes they result from a brain lesion and sometimes from such conditions as diseased bone in the face, or eye troubles.

The habit of romancing and lying is often due to mental deficiency or abnormality and it is of the greatest importance that a child who has either of these habits should be taken to a specialist on mental troubles. This may seem queer advice to you, but its early acceptance may save much distress and anguish later.

The Habit of Self-abuse. This is common to a moderate extent in both sexes. Children should be taught that unnecessary handling of their genitals, even in private, is immodest. Any irritation in or around these parts should have a physician's attention. The clothing should never be tight in this region. Bed covering should always be light

and not too warm. Feather beds should never be used. Children should be warned against and forbidden bad companions and the character of the nurse should be looked into. It should be recalled that irritation of the parts may be caused by filth, pin worms and games in which narrow objects are straddled.

Self-abuse may be caused and exist for a time by any of the above-mentioned conditions, but it is doubtful in the writer's mind whether habitually continued self-abuse over long periods of time ever occurs in normal children. The individual whose better self does not revolt against such a practice must be, and we know for a fact usually is, mentally disturbed. Children with this habit, therefore, should be taken to an understanding physician.

So much for special habits. Space does not admit of continuing the subject further, nor is it necessary, for if one understands the principles underlying habits in general and their correction he will know how to deal with the varieties.

A few other things may be remembered. Neuropathic constitutions induce bad habits and in turn dominating evil habits make neurotic and poorly balanced children and adults. A bad habit may often be replaced by a good one, or, if we are not careful, a bad habit may be replaced by one more pernicious.

It is usually unwise to offer rewards for the breaking of a habit. It is wiser to stimulate the child's pride and direct its will. Remember especially that

scolding, quarreling and whipping do not break habits that are really formed. A habit, as we have said, is the expression of an individual to better his condition according to his light, and scolding and whipping do not appeal to his desire for bettering his condition and hence are poor correctives for his habit.

CHAPTER V

EUGENICS AND SEXUAL HYGIENE

EUGENICS

EUGENICS is defined by Sir Francis Galton as "the study of the agencies under social control that may improve or impair the racial qualities of future generations either physical or mental." This definition is good as far as it goes, but it fails to emphasize the greatest aim of eugenics and that is moral racial qualities.

Under the head of moral racial qualities should be included love and sentiment. Let us not forget this, otherwise we will inaugurate and carry on a great movement, the progress of which we cannot stop, which will give us in place of improved future generations a set of beings so lop-sided in their characteristics that they will be a curse rather than a blessing.

Suppose that we cold-bloodedly mated men and women in accordance with their physical and mental status, and tried to make this status as near perfect as possible, disregarding the elements of sentiment and love, what would we propagate? We would produce beings beautiful of stature and fea-

ture, strong and enduring of health and brilliant and logical of mind, but as heartless and cruel and unlovable as imagination can possibly portray. What could we expect from marriages without love, from mating without mutual attraction and from the disregard of home and family life?

The Necessity of Eugenics. It is amazing that the breeding of horses, dogs, cattle, chickens and even plants has received more study until very recently than that of the human family. For centuries we have closed our eyes to the agencies which cause race degeneration, soothing our sense of responsibility by building prisons, asylums and alms houses, and stopping our ears to the piteous wail of those who cry, "Why should I ever have been born?"

He who knows not the ravages following the intermarriage of the closely related, the tuberculous, the syphilitic, the mentally, morally and physically defective, must indeed be a hermit. The generally accepted ideas of love, affinity and mating shall all have to be rearranged. They are ideas of long standing which have done much to bring about deplorable conditions.

The government and the law can take cognizance of certain factors in the situation but they cannot do so with an iron hand. Knowledge, education and publicity are the chief implements upon which we rely. Although we cannot add one cubit to our individual stature, we may add to the stature of posterity and raise it mentally, morally and physi-

cally to heights inestimable. The remedy is to train our children to know that people of the feeble-minded class, defective physically, mentally or morally, are unmarriageable so that healthy stock will not mate with defective stock.

It has been shown in the study of one thousand families that between father and son the stature, the span and the length of forearm in the intensity of resemblance, as measured by the coefficient of correlation, are a little under fifty per cent., and the same is true of mother and daughter. This shows that the characteristics measured are inherited to a definite degree. Similar studies have shown that the intensity of resemblance between brothers and sisters is greater, being over fifty per cent. The study at Oxford of the intellectual ability, as measured by university scholarships, shows the same degree of family resemblance as the physical characteristics, while studies of heredity among the feeble-minded, alcoholic and criminal families show at least the same degree of resemblance.

Judging from what has just been said, some may believe that deterioration may not take place, that honors are about even and that whereas we are not likely to advance, still we are not likely to degenerate. It will disabuse the reader's mind at once of any such mediocre contentment, if the comparative study of fertility in pathological and normal stocks is considered, and we will see why it is just as necessary to awaken the conscience of nations to the sense of their responsibility and defense, as

it was for Paul Revere to ride in the night and awaken the American people to a sense of preservation and defense from an entirely different and much less dangerous enemy.

Much disputation has taken place as to whether the criminals per 100,000 and the insane per 100,000 have increased. Students of the subject know that they have, while the optimists and the easy-goers say without investigation that the apparent increase is simply due to better methods of observation and statistics. A man who goes through life shirking responsibility, persuading himself that everything that happens, happens for the best, letting trouble roll off of him, is called an optimist and is considered a blessing to humanity. A man who goes through life calling attention to the leaks in the sea wall, trying to have them stopped, and predicting a catastrophe if they are not, a man who steeps his mind and body in the care and responsibility of his fellow-man, a man who with infinite toil, sacrifice, patience and love of his brother delves for fundamental facts and defects in systems, is oftentimes called a pessimist and is laughed and jeered at or simply ignored as a nuisance. The peacock is a pretty bird, pleasant to the eye, harmless and pompous, a pet of the leisurely and wealthy, but its existence is not a very useful one. There is another bird which is disgusting in its habits, homely in its appearance, but useful in its life—nature's scavenger—the buzzard. Now the peacock is not the only beautiful bird, and his voice

is anything but sweet, and he can only strut, he cannot soar. The buzzard is not the only useful bird, nor are his methods the most approved; he cannot strut, but in graceful circles he can soar and purify himself in cleaner air and see the world from wider range. The human buzzards are worth more to the world than the human peacocks.

Facing the question fairly, it becomes our duty to teach our children early that marriage and propagation of the human race is a primary and sacred duty among the normal, and that it is a still more sacred duty to prevent marriage and propagation among the unfit. Having accepted these facts, the question which presents itself is, who are the unfit? It would take a volume to go into this thoroughly, but those who have charge of the rearing of children should do so. Something will be learned by reference to the chapter on the feeble-minded. Here we can only mention briefly some of the main things to be avoided.

Children should be educated to feel that people with constitutional disease are unmarriageable and should be trained to know that whereas they may have pity, compassion and charity for the unfortunate classes, love with a view to matrimony is wrong and must not be countenanced. Thus, individuals with tuberculosis, syphilis, hereditary or acquired, and gonorrhœa, active or latent, should not be allowed to marry. The same dictum should be applied to habitual drinkers, those who have periodical sprees, or other drug habitués, and also to peo-

ple with fixed sensual habits. Marriage should also be interdicted among people who are epileptic, feeble-minded, criminal or insane. People who are congenitally physically defective should not be allowed to marry. This would include those with congenital ataxia and atrophies, monstrosities, dwarfs and giants. Going even further than this, the boy or the girl should be instructed that an individual even apparently normal but who springs from a stock in which these things are common, should be approached from a matrimonial standpoint with the greatest caution, and only after strict, dispassionate scientific investigation and censorship. The neurotic woman from a defective family is often pretty in appearance and in a certain sense attractive. Her dependence appeals to a man and she develops those arts and wiles which are generally considered seductive. She may stimulate a love originated by compassion, which may carry the man off his feet, so to speak, and he marries with his heart rather than his head. This heart usually aches afterwards past relief. The girl may marry to reform some man whose habits as an alcoholic or rake have stimulated her compassion, heedless and probably ignorant of all the suffering she may create in the future.

If one has learned that the rake, the alcoholic and the psycho-neurotic belong to the feeble-minded and defective class with the fool and the kleptomaniac, one, even if young, is not so apt to fall in love with an individual so afflicted.

SEXUAL HYGIENE

The author approaches this subject with a mixed feeling of reluctance and of desire. Why with reluctance? Because it has been a question extending through all the ages which has never been satisfactorily settled. Why with desire? Because of the importance of the subject in its bearing upon the nervous child and the necessity of setting it forth in a common-sense and useful manner.

Whereas in times past the pendulum has swung too far to one side—that of conservatism, ignorance, tolerance, “sub rosa” sensuality and immorality, at present the tendency is for it to swing too far to the other side—that of indiscriminate sex knowledge, fanaticism over sexual education, and too free sex discussion.

The subject is debatable from every point and it is the writer’s desire only to suggest the safest road for the young, and especially the neurotic young, to travel. Individual cases will have to be worked out by those in control and to these it is right to say: be deliberate, wise and cautious, lest “fools rush in where angels fear to tread.”

We must first recognize that sex is the basis of all life—animal, vegetable and possibly mineral. We must also realize that what is sexual is not of necessity sensual, that unmorality is not immorality, that morality is not synonymous with piety, that ignoring a social evil is not combating it, and that making immorality a subject of public discussion

and condemnation is not stamping it out. We are at present going through a chaos of ideas upon moral subjects. No man except by mere wild guess can predict the outcome. Forces of restraint are being met by forces of *libido*. If this is not believed note the outcry against prostitution, the laws against drinking, the activities of societies for the obliteration of the social evil, while on the other hand, note the street dress of women, the freedom of association and conversation of opposite sexes, the increase of public drinking among women and the wide tendencies of the modern dance halls.

To become as correctly oriented as possible, we will have to leave the above questions and simply attempt to solve the problems as best we may, and then see what effect this question of sex instinct has upon the nervous, mental and moral life of children as they grow and develop into adults.

The birth of the baby into this world is distinctly a sexual act but there is nothing sensual about it. If it is born in wedlock it is an occurrence sacred in family life, commendable and congratulatory. If out of wedlock, the birth itself is still a sexual occurrence, not sensual but unlawful, uncommendable and an evidence of parental immorality. Both births are natural as far as the baby is concerned physically, but the parental act resulting in birth in the first instance was sexual and in the second probably both sensual and sexual. It seems fair to presume that, providing the parents in both cases were from normal stock, the child in the first instance would not inherit sensual tendencies and the

child in the second might or might not. A greater influence, however, upon its life would be environmental influences. The attitude toward an illegitimate child would not be the same as toward a legitimate child, and if the child knew of its illegitimacy there would seemingly be a further loosening of the bonds which hold us all according to their adjustment and strength. An illustrative case recently came under the writer's observation. A girl of seventeen who had for years been a little sensual as shown by immodest extremes in dress but not otherwise, found out four months before, by accident, that she had been an illegitimate child and that the people whom she had always looked upon as her father and mother were really her foster parents. With this knowledge, she became more immodest in dress, less careful in her attitude toward men, and developed marked hysteria.

Children of immoral and defective stock are liable to be sensual, perverted and neurotic. Children of premature birth may not develop the normal amount of sexual control and children with under-developed sexual organs may tend toward perversions or asexuality, while those with over-development may be sensual. There is a gland at the base of the brain, the pituitary gland, an under-secretion of which will cause deficiency of the sex development, hair, breasts and genitals, while an over-secretion will bring about over-development in these respects which may be accompanied by an exaggerated *libido*. A local cause, as a caruncle,

elongated prepuce, adherent hood of the clitoris, inflammation of the parts, pin worms or an abrasion, may have a definite influence upon the sexual life of a child. Too warm clothing, too warm bed cover, clothing which presses the parts or which is rough, may have the same effect. Bad companionship, sensual nurses, immodest parents and relatives, vulgar stories, sights and books, have marked erotic and pernicious influence upon the child.

Sexual shocks to the child and isolated or connected sensual acts and suggestions, may be manifested later in life by profound nervous disorders which may be traced to the early sexual trauma. Dreams of sexual nature and many if not most other dreams have a distinct bearing on the sexual life of the child.

We can readily see that sexual disturbance is based on so many things that those in charge should be on constant watch. With this simple injunction, however, comes a caution to the effect that the child should not be always cognizant of this surveillance. The writer feels convinced after considerable observation and change of opinion that it is unwise to keep the sex question too continuously before the child or to attempt to educate the child too profoundly upon this subject. Any sex discussion has an element of mystery, of appeal for more light or for the satisfaction of curiosity which it is not well for children to meditate upon too long or delve in too deeply. Children will fre-

quently even read portions of the Bible for sexual excitation.

Ignorance is not innocence and children have a right to know enough to protect themselves. It should be understood that the child is to tell a responsible person any unusual sex act or sensation it may experience. They should be told early *the abstract fundamental facts* of sex life, of immorality and its dangers, of physical phenomena like menstruation, of venereal disease and of the consequence of evil habits and companionship. This knowledge should be given without elaboration and by the parents if they are suitable; if not, by experienced sensible persons. I wish to emphasize that *sex knowledge to male children should be given by males, and to female children by females, and that it is wisest to give it to children individually and not in groups or classes.*

If a child shows any abnormal sexuality it should be investigated by a competent physician and promptly treated. Before the doctor should be laid bare all the facts connected with the case and especially any moral delinquencies in the family. Children of abnormal stock, of unusual development in any way, especially of the body hair, breasts or genitals; children who are asocial or peculiar; those who have difficulty or pain in urination, or wet the bed; and those who have mental, emotional or physical peculiarities or perversions, should be kept under the observation of a good physician who understands these conditions.

Dr. Sigmund Freud, of Vienna, has elaborated

a theory which views every case of hysteria and psycho-neurosis in the adult as the outgrowth of sexual trauma of early life. While he and his disciples may go too far in their conclusions or be mistaken in some of them, still it cannot be successfully denied that this theory has wrought a considerable amount of good both in the diagnosis and treatment of these cases. In conjunction with the method of psycho-analysis which contemplates the recall of early sexual experiences by the patient at the suggestion of the physician, the cure is brought about by the recognition on the part of the patient that a repressed sexual act of which he is only subconscious is the cause of his nervous condition.

Evil companionship and association with the feeble-minded are responsible for the moral obliquity of some children. Lack of child companions, asocialness and tendencies toward characteristics of, or physical appearance resembling, the opposite sex are dangerous and may tend toward homo-sexuality.

Overstudy, too much indoor life, child labor, indolence, absence of high ideals and examples, early reading of newspapers and cheap novels, over-avoidance of rough play, over-fondling, lack of discipline, careless religious training, late bed hours and the use of tobacco, stimulants and narcotics all have a deleterious effect upon the sexual life of the child. Intolerance of the faults of others, ostentatious piety and uncontrolled anger, love or

hate tend toward sexual difficulties either as relief or defense reactions. It is well to remember that the child as well as the adult who parades his virtues should be suspected of moral lapses.

When abnormal sexuality is recognized in any of its forms, the child is morally sick and deserves medical attention as urgently as if it were physically ill. Misdirected punishment will make matters worse, and so will abuse and tears. Each case must be treated individually, the only general measures being hygienic regulation of the life of the child in its broad sense, the instillation of ambitions directed towards its moral uplift, and an appeal to its reason.

There are certain acts and conditions of pervertedly sexual or sensual nature which are not recognized as such but the true relation of which may be shown by psycho-analysis. This is especially true of certain dreams, acts of cruelty and of wanton destruction.

Vivid dreams, especially if frequently repeated, usually have a wish content and this wish is often sexual in nature. This may be true even when the dream bears no apparent relation to sexual subjects and without the objective knowledge of the dreamer. For further light upon this subject the reader is referred to the works of Freud and others, with the warning, however, that unless he is pretty well grounded in physiology and psychology he had best not pursue it.

Impulsive cruelty, if combined with delight in the

sight of blood, torture and flagellation, is always pathological and usually sensual. Sometimes it takes the place of sexual satisfaction, whether inflicted upon others or self. This may even apply at times to hurting the feelings and sensibilities of others.

Such impulsive acts as a girl cutting off her hair, a boy wantonly tearing his clothes or those of others, or of either destroying valuable or sacred things, especially if they are apparently otherwise mentally normal, may or may not have a sexual basis.

It is wise to take children who show any of the foregoing traits to a competent neurologist.

CHAPTER VI

THE CAUSE AND PREVENTION OF NERVOUSNESS IN CHILDREN

THE organic nervous diseases of childhood will not here be dealt with, either as to their prophylaxis or cure, but an attempt will be made to point out a few of the most important causes and conditions which may lead to neurotic and psychic phenomena and diseases in children that we may more intelligently try to prevent their occurrence or to combat them when they appear. To do this we must study the children and not only separate them into classes, but find out the mental, moral and emotional characteristics of each child, as well as its physical status.

THE CAUSES OF NERVOUSNESS IN CHILDREN

Although nervous children have been described through all the ages of history, the stress of modern civilization has not only increased their number but also produced more severe types of nervous conditions. The general causes of nervousness and nervous diseases in children may be divided into three great heads: inheritance, environment and ac-

quisition. From the inheritance class come those of constitutional inferiority, from the slightly defective down to the degenerate. From the environment class come those so situated and reared that their character and stability are poorly developed and in consequence they have but little endurance, are self-centered, unhappy and more or less dependent. To the acquisition class belong those children whose nervous systems are affected because of injury, acquired disease or circumstance. This class plays largely upon the other two classes for its victims.

Nervous children tend to make neurotic adults and their pernicious influence spreads, so that we approach the nervous child not only with the idea of bettering its individual condition but through it to exert a beneficial influence upon society. In the first place, the nervous child is, itself, unhappy. Then it saps the vitality and happiness of the family. Many of these children grow to fill the ranks of the unemployed, mentally unbalanced, drug addicted, criminal and pauper classes.

The more common causes of nervousness in children will be mentioned. The fault most frequently does not lie with the child, but with the parents, our school systems and our mode of living. Beside "the sins of the fathers being visited upon the children" parental over-indulgence has a baneful effect. The management of nervous children must begin at least with the instruction of normal parents, and the management of neurotic parents. Some parents take for granted that as the child is

nervous it must be petted, over-protected from supposed shocks and not allowed to "rough it" in the least. As time advances we are developing that neurotic type of individual who is selfish, peevish, peculiar, inconsiderate, egotistical and without self-control, or probably that worse type still, the whining, dissatisfied, uninitiative, useless, weeping and self-abasing kind. We should remember that unnecessary self-abasement is the highest exemplification of conceit. Again, hysteria, neurasthenia and alcoholism are, for instance, but symptoms of a neurotic constitution. Such causes of nervousness as the need of eyeglasses, enlarged adenoids and tonsils, elongated foreskins and decayed teeth, are but irritative and reflex causative factors, although of course they need recognition and correction.

Pernicious habits in children should be carefully investigated. Picking the nose, irritating the vagina or penis, bed-wetting and snuffling often have local correctable causes. In cases of tics, grimaces and choreic movements, and in fact with all nervous children, the condition of the digestion, teeth, eyes, ears, nose and throat should be studied.

The crowded condition of our cities, the lack of playgrounds, the leaving of children so much to the care of incompetent and often immoral nursemaids and the constant demands upon their observation and attention undoubtedly increase nervousness in our children. At night at the moving picture shows and on the lighted streets one may see babes in arms. These little ones not only suffer

from the effect of late hours but also from the excitement these experiences produce.

Congenital syphilis is undoubtedly a cause of nervousness in children and may appear where least expected. About fifty per cent. of the children I have examined for the Juvenile Court of Richmond show evidences of inherited syphilis. Many children with nervous affections, as atrophy, hydrocephalus, spastic paralysis and other birth conditions, and even some cases of epilepsy and mental trouble, have been found to have a congenital form of this disease, as shown by the Wassermann serum test.

Long continued illness or pain at times produces nervousness as an aftermath, and often shorter illnesses, as scarlet-fever, measles, whooping-cough, malaria and other acute infectious diseases leave the child's nerves temporarily or permanently below par. Injury at birth, or after, to the brain or spine or nerves may make the child nervous or leave it with an organic nervous disease.

Constitutional conditions, as debility, improper food assimilation, rickets, rheumatism and kidney disease have much to do with nervous children. Among other causes are intestinal worms, especially the hook-worm, appendicitis, birth marks, deformities, constipation, drugs and tobacco, coffee, tea and alcohol, and irregular hours for food and sleep.

A newly discovered and highly interesting cause of nervous conditions in children is a disturbance of

one or more of the ductless glands. A brief description of ductless gland disease may not be amiss.

DUCTLESS GLANDS

The glands of the body giving internal secretion, that is, an organo-chemical secretion which is taken up by the blood, are known as ductless glands. The internal secretions of the pineal gland, the pituitary gland, the thyroid and parathyroid glands, the thymus gland, the suprarenal gland, the ovaries and testicles, and at least part of the secretion of the pancreas come under this head. The glandular secretions which chiefly concern us are those which have to do with development, and are the secretions of the pineal, the pituitary, the thyroid, the thymus and the suprarenal glands.

The Pineal Gland. The pineal gland is situated in the mid part of the base of the brain and is supposed to be the rudiment of the pineal or third eye. We have very little, if any, evidence, however, to support this idea. We know very little about the action of the internal secretion of the pineal gland, but recent experiments have shown that animals fed on the pineal gland increase to adult size, both mentally and physically, with very much greater rapidity than those not so fed. After they attain adult size they do not continue to grow. In other words, it has nothing to do with the production of gigantism. This work is so new that further assertions cannot be made, but it is hoped by workers in this

field that under-developed children fed on pineal gland will improve.

The Pituitary Gland. This gland is situated at the base of the brain. Studies of the physiology of the pituitary gland are also new but we know some very definite things about this gland, an under-secretion of which causes diminished body hair, increase in fat, under-sexual development, in some instances epilepsy, effeminatism in the male and often amenorrhœa in the female. A disease or tumor causing over-development of the structure of the gland with, however, an under-secretion causes either giantism or a condition known as acromegaly, in which the bones of the face, hands, feet or other portions of the body increase in size. Functional or pathological overactivity of the gland causes increase in sexual development, sometimes exaggerated *libido*, long bones and often nervous or mental disturbance. One of my cases began to menstruate at two years of age and had a full growth of body hair under the arms and over the pubes at six years of age, and at eight her breasts were the size of those of a grown woman. This child was nervous but exceptionally bright at school.

The pituitary gland consists of two lobes, an anterior and a posterior, the differential functions of which have not been accurately determined. Besides the changes mentioned, this gland has much to do with blood vessel innervation and therefore with blood pressure.

The Thyroid Gland. This gland is situated at

the front of the neck and undergoes a moderate physiological enlargement in most girls at the time of puberty. An absence of the gland causes a condition known as cretinism, in which the patient is sallow, short, stout and weak-minded. If these cretins are fed on thyroid gland or thyroid extract, a most marvelous change for the better occurs in the development. An under-secretion of the gland causes what is known as myxedema, in which the complexion is pale and pasty, the perspiration diminished and the mentality dulled. An over-secretion of the thyroid causes flushing, rapid pulse, tremors and nervousness. A goitre may develop and the eyeballs become prominent.

The Thymus Gland. The thymus gland is strictly a gland of childhood, situated in the thorax, and has to do with the general development of the child. This gland weighs from one-half to two ounces and disappears between the seventh and eleventh years, and under-developed children fed upon thymus gland frequently improve. With under-secretion of the gland, children become pale, often chlorotic. They may have soft bones, show evidence of feeble-mindedness or have enlargement of the lymph-nodes, a condition known as status lymphaticus.

The Suprarenal Glands. These two small glands are situated on the apex of each kidney and give a secretion which has much to do with vascular control as shown by the blood pressure. They also have a function related to the growth of body hair

and sexual development.

In all ductless gland diseases there is usually one gland whose fault is paramount. The other glands are more or less involved. Children with any symptoms of these troubles should be taken to a physician competent to handle them.

PREVENTION OF NERVOUSNESS IN CHILDREN

In discussing neurotic children, one would have to go into the subjects of heredity and eugenics, both of which have been treated elsewhere in this book. It has also been pointed out that conditions acting during the intra-uterine state have but little effect upon the child. It may be further stated with some degree of emphasis that a child born of stock which has been normal for several generations is not at all likely to be really neurotic, certainly not likely to be chronically so. The vicissitudes of life are such, however, that no one is exempt from the chance of becoming nervous, and therefore what remarks are made upon the prevention of nervousness in children may apply to all children but more especially to those who, through bad heredity, are predestined to neurotic tendencies. Attention should be called to the fact that but very few individuals are born into the world with an ideal heredity back of them. The subject of habit which has a bearing here has been treated in a separate chapter.

To begin, then, with the child at birth, we must

first prevent birth injury, as far as possible, and this should include the prevention of too long a labor, the very careful and skillful use of forceps in delivery when they are necessary, the careful use of drugs and anesthetics to regulate labor, the thorough inspection of the child for injury, disease or abnormality as soon as it is born, and the proper physical care of the child during its first few weeks of life, and especial and extraordinary care of those children born prematurely. All of this is in the province of the physician but the advice may be given to parents that they should select a trustworthy and experienced physician and nurse, and that they should not leave these important matters to midwives.

As previously mentioned, care must be taken to see that the infant is properly clothed, that it is fed regularly, that the food is correct both in quantity and quality and that excessive light, noise and handling are avoided. The child should also be taught from the earliest possible date regular habits of defecation and urination.

Breast-fed children are usually less nervous and more healthy than bottle-fed children, but even when the baby is taking the breast it is extremely important to know that the mother's milk is plentiful and good. And here I would like to call attention to another factor. To keep her milk good, the mother should be freed from unusual stress, anxiety and strain, and what medicine she takes should be under the direction of a competent physi-

cian, for it is well known that certain drugs are eliminated in the mother's milk as a medium and have a direct and often detrimental effect upon the child. Again, these matters are chiefly in the province of the physician, but he can accomplish nothing without intelligent co-operation on the part of the mother.

With bottle-fed infants the problem is, of course, greater. The milk has to be right in quality and in quantity and its formula changed to suit the growth of the baby. Great care should be observed in the selection of the milk and in keeping it. I have seen meningitis develop in children who were fed with milk from tuberculous cows. Bottle-fed children should be so fed only under the direction of a good physician. Those children who for any reason cannot take fresh cow's milk and are fed on condensed milk, malted milk or the various infant's foods, are especially liable to develop nervous diseases. These starchy foods often make children fat but anemic and lacking in bone development and also in nerve tissue nutrition. Children who have to be so fed should have lime water, fresh fruit juices and olive oil in addition to their condensed or farinaceous food. The physician and the mother again will have to co-operate intelligently.

Children frequently become nervous from over-medication. Coal tars, opiates, and in fact all strong drugs, should be used only when necessary and then with the same degree of care that poisons are administered to adults. Especial warning is given

against the use of patent medicines. Many a child's nervous system, as well as its general health, has been undermined by these concoctions. Pacifiers should be avoided and the child should not be allowed to suck its thumb or other articles. It has been said that thumb sucking has even aroused sexual instincts in children.

During the period of dentition the child should be under the observation of a physician, and often the simple lancing of a gum will obviate days of fretfulness. When children begin to walk and talk they should not be pushed in these respects, but rather let nature take its time. As children become older the careful regulation of their habits and food should be continued. Many a healthy child is made delicate because the parents allow it to pass from an absolute milk diet to a general adult diet entirely too quickly, while on the other hand, many are kept upon a milk diet too long.

Corporal punishment should be avoided and the child's conduct corrected by calm reasoning or diversion. If the child has to be punished in any way, this punishment should be immediate, not too severe, and the child should understand for what it is being punished. Delayed or prolonged punishment conjures up fears, morbid thoughts and resentfulness in children and does more harm than it can possibly do good.

Even from a very early age, children should be taught ordinary modesty. Children of the opposite sex should not be undressed or bathed before each

other, nor sleep together. The parents should be as modest before their children as they would be before more remote members of the family. Children should not hear vulgar anecdotes, gossip or sensational stories. They should be taught to respect their persons and avoid things that are vulgar. They should be instructed to tell their parents of any vulgar episodes that may come into their lives or under their observation. Religious instruction, when rational and sensible, is a tremendous safeguard for the developing child. The child should never be frightened by the implantation of ideas of damnation or hell-fire. It should be taught to do what is right for righteousness' sake rather than the promise of a heavenly reward, but these matters are too intricate for prolonged discussion. Children should not be harried with superstitions and ghost stories.

Children should play with each other, should enjoy games and learn to do useful things about the house. They should be taught neatness but should not have inculcated in them tendencies toward finery, extremes of fashion and artificial personal decoration.

In their play and pursuits, children should follow to a certain extent their natural bent. Girls should play with dolls, learn sewing, cleaning, cooking and other feminine accomplishments, and it is perfectly proper for boys not to play with dolls but to get their amusement from boys' games, mechanical toys, etc. This does not mean that girls up to puberty

should not take the outdoor exercises that boys do, and in fact they should swim, skate, ride horseback, play tennis, run and jump. Exhausting games should not be over-indulged in with either sex and I have known long continued jumping the rope and roller skating to do definite harm.

Another source of strain to the nerves of children is indoor gymnasiums. Often these places are in basements, poorly ventilated and without direct medical supervision. Each child endeavors to keep up with the best child in the class, and the instructor urges this. I have seen cases of acute cardiac dilatation and some of chronic hypertrophy among these children, and I believe these conditions are caused as much by nervous exhaustion and excitement as by physical exertion. The physical training giving the best opportunity for development of the nervous and mental system is exercises in the open, stimulated by such sports as hunting, fishing, swimming, tramping, boating and riding. Golf, tennis and baseball are also good but not equal to the others. There is no sound reason, and I say this with firm conviction, why all these sports should not be indulged in up to the time of puberty by girls as well as boys, or why a girl should have a nervous attack when a gun is exploded, or a bird killed or a fish caught. Any esthetic qualms of feminine solicitude she may have for the dead bird or landed fish is overbalanced by the knowledge gained of the habits of birds and dogs and fish, and the nature influence of a glori-

ous day in the field or the quiet hours by the brook.

The child, whether male or female, should not be tied to its mother's apron strings, and it is necessary that a certain amount of independence and ability to work out their own simple problems should be gained by children. Children should love nature, scenery, cloud effects, trees, animals and birds, and should be taught that the preservation of many forms of lower life is a part of their duty. Advice of this kind might be continued indefinitely, but all we can do is to point the general path along which the child should travel.

There is another factor which adds to the frequency of nervousness in children, which has been much overlooked, and that is the effect of acute diseases. One often hears it said that it is best to allow the child to catch a disease, whooping-cough or measles, for instance, and get over it. With this advice I entirely disagree. I do not think that parents should have a morbid fear of these diseases and go to extraordinary lengths to avoid them, but every ordinary precaution should be brought into play, for in the wake of these diseases follow many serious nervous conditions of childhood. One often hears it said that these diseases are much more severe in the adult than in the child, and this is used as an argument for the child to be allowed to contract the diseases. We must, however, take into consideration that by the time the present child is an adult some of these diseases may be practically stamped out and that the best way to elimi-

nate an acute infectious disease is to prevent its spread by avoiding contact with diseased children. One can hardly speak too forcibly upon this subject.

Parents should avoid popular waves of conduct and schooling for their children until these have been thrashed out. These changes have to come more or less gradually. Fifty or seventy-five years ago a child might have been taught Greek, Latin or rhetoric at entirely too early an age. The idea that duelling was necessary to avenge an insult in adults might have been inculcated in the child. Waves of dress extremes, of atheism, of odd educational requirements, of peculiar modes of conduct have swept the country from time to time, and one should be careful not to be carried away with a false idea. For these reasons the caution against forced sexual education has been previously given.

Children should not be pushed beyond their capabilities, and tasks should be distributed according to the nervous temperament and the mentality of the child. A child should not be taxed with the solution of intricate school, social, mechanical or other problems before puberty is passed.

As the child approaches puberty the ordinary facts of menstruation, physical and sexual development, necessity of limitation of certain activities, change in mode of dress and in manners should be made known to the girl, preferably by her mother. The increased responsibility, and the body and sexual changes due, should be made known to the

boy and it should be thoroughly established in his mind that immorality and excesses in drinking and smoking are not necessary to manhood, and in fact are not at all attributes of manliness but rather distinct indications of an unmanly lack of control.

Through all the period of childhood, consideration for others, a high sense of integrity and honor and of self-respect should be maintained.

CHAPTER VII

THE TRAINING OF NERVOUS CHILDREN

IF a child has a recognized nervous disease, it will be taken to a physician, but this important procedure is often ignored when the child is backward, inattentive, incorrigible, eccentric or restless; or lacks interest, is unaffectionate, cruel, asocial, high strung, or emotional; or has morbid fears, bad habits, twitches, fits of temper, night terrors or any one of the hoard of traits by which children are known as backward, peculiar or simply "nervous." Any of these traits puts the child in a position where it is our duty as its protector to give it every advantage which civilization, medicine, science, education and philanthropy offer. We will consider our subject under the headings of the defective, the mentally disturbed and the nervous child.

THE DEFECTIVE CHILD

The only place to train the markedly backward, feeble-minded and defective child is in an institution properly equipped and conducted for this work. Fortunately, these institutions are becoming more numerous. No one familiar with the results ob-

tained at such an institution as the Vineland Training School for Backward and Feeble-minded Children, can fail to be impressed with the wonderful helpfulness this school gives, not only to the child but to society. Many smaller training schools, some of them offsprings from the Vineland Training School, are doing the same work in a more limited sphere. It is often difficult, however, to make the parents see the advantage of putting their feeble-minded child in an institution. It is the only real hope for the child and a blessing to the family from which it is taken. A mother's love is a beautiful thing but when it is so unreasonable that she denies her child the opportunity of betterment and makes the home unhappy by the presence of a mentally enfeebled child in the family circle, it is to be viewed as, at least, a menace.

The wayward, the inattentive, truant, lying, incorrigible, criminal or perverted child is usually *feeble-minded*, the defect predominating in the moral sphere, and unless its home environment can be made elevating and instructive, which is rarely possible, children showing one or more of these tendencies should also be put in proper institutions. The "black sheep" in the family usually grow to be such because the necessity of institutional early life is not recognized. The influence of these members of society does incalculable harm and in their train follows untold grief. There are far too few training institutions and trained individuals to look after this class of defectives, and the tendency of

parents to handle these children badly, either by over indulgence or too much severity, is widespread. It is rare indeed that those whose affections are involved by parentage do anything but harm to these children. For further consideration, see the chapter on defective and feeble-minded children.

THE MENTALLY DISTURBED CHILD

The eccentric child, the child with morbid fears and hallucinations, chronic masturbators, those who have frequent outbursts of uncontrollable temper or who are unreasonably suspicious or have marked exaggeration of ego, are frequently *candidates for insanity*, especially if the heredity is defective, which it usually is, and the advice of a competent alienist should be sought and followed. These children may or may not show feeble-mindedness. They may at times be trained to be useful citizens. Each case should be studied and advised individually.

The mentally disturbed child has a defective ancestry and will have defective descendants unless its mental disturbance is due to injury, auto-toxemia or extraneous poison. Careful observation will quite readily separate the child who has an acquired mental disturbance from one who is congenitally affected.

The mental disturbance from toxemia or poison is usually, but not always, more or less sudden. For example, a child who has been normal and exhibited no mental peculiarities may have an acute illness,

such as any of the usual diseases of childhood or any infectious condition, and following this, either immediately or within a few months, mental change is noted. If the mental change is immediate it usually takes the form of stupor or confusion or delirium and is due to inflammation of the brain cells. If the mental change is not immediate but seems to follow the illness in a few weeks or a few months, the symptoms are usually those of lapses of memory, mental fatigue, slowness of mental grasp, peevishness, temper spells, lack of judgment, confusion, unfounded suspicions, depression of spirits, spells of mental excitement or suicidal tendencies. Suicide in children, however, is extremely rare. These conditions may result either as an aftermath of acute inflammation of the brain cells or come on from the brain cells being gradually affected by chemical poisons generated in the blood by previous disease. The condition is known as toxemia and may also occur from severe constipation, intestinal fermentation, ductless gland disease or anything that will disturb the chemical cellular interchange which is known as the process of metabolism. The brain cells may be altered in their size and function or they may degenerate. As a rule, fortunately, real cell destruction does not take place and the patients recover. Blows on the head may cause hemorrhages, serous exudates from the blood or laceration of brain tissue, and coma, stupor, convulsions, mental deficiency or mental excitation, changes in disposition and even in the moral

character, may result.

The acute or chronic intake of extraneous poisons may affect the child's mentality. The child may be given alcohol, opium, lead, arsenic, phosphorus or various other poisons, either intentionally or unintentionally. Children are sometimes given whiskey, wine or beer in small quantities habitually, from either carelessness or ignorance, or they may get alcohol by the administration of patent medicines or tinctures. Opium and other narcotics and poisons may be administered as medicines with deleterious mental effect. I have known a case of lead poisoning from the too long continued administration of subacetate of lead pills for diarrhœa, of opium poisoning from a patent "pneumonia cure" rubbed on a child's chest for a cough, of alcohol poisoning from taking a well-known patent medicine, and of arsenical poisoning supposedly from sucking green colored articles. Contact during childhood with any kind of poisonous material should be avoided. Many children contract lead poison by remaining in a house while it is being painted or by playing with fresh paint, or become poisoned by phosphorus by putting matches in their mouths, or get tobacco poisoning by using tobacco "for fun." The symptoms, and especially the mental symptoms, of the various poisons depend upon which poison is acting. When the discovery is made, the poison stopped and the proper antidote or reconstructive treatment given, the patient will usually recover. Children are very susceptible to all toxins and poisons, and what would

have no effect upon an adult might be particularly injurious to a child.

Auto-intoxication may be induced by irregular habits, bad constipation, intestinal fermentation, worms, kidney and bladder disease, decayed teeth, infected tonsils, and in fact anything that will affect the physical health of the child.

The mental disturbance of the child may or may not be accompanied by hallucinations and delusions.

An hallucination is a sense-perception not founded on an objective reality. Hallucinations usually refer to the special senses. For instance, if a child should hear voices when no one is speaking it would have an auditory hallucination. It may have visual hallucinations by imagining it sees faces or scenes which have no reality.

A delusion is a mistaken conviction, out of the falsity of which the patient cannot be reasoned. A child may believe that it has goodness, power or wealth which it does not possess, or that some part of the body is missing, or that it is being injured by persecution, or that "spells" or electricity are "being put upon it."

An illusion is a false perception which is correctable, and is not an abnormal mental manifestation. For instance, a child may see a stick and think it is a snake, but when the properties of the stick are shown it becomes convinced of the mistake.

Children showing hallucinations and delusions should at once be put under the proper medical care.

In the chapters on nervous and mental diseases of childhood will be found some of the premonitory symptoms of special forms of alienation.

THE NERVOUS CHILD

The child who does not sleep well, who has night terrors, or who is emotional, high strung, restless, sensitive, twitches, wets the bed, bites its nails, is precocious, has occasional moral lapses, brief periods of loss of memory or consciousness, is over affectionate, has loss of appetite, disgust for food, is easily fatigued, has localized muscular weakness, difficulty in concentration, is over conscientious or has any one or more of the scores of symptoms marking it as a "nervous" child, may have a physical or functional cause for the trouble which is perfectly correctable, and from this class come many of our most useful citizens if they are made stable and learn control. To this class, fortunately, belong the vast majority of abnormal children.

Every neurotic child should be the subject of careful individual study and the training should be such as to lead it into normal paths. Space does not admit of anything like a full discussion of the way this training should be carried out; consequently, only a general idea may be outlined.

In the training of nervous children, let us first try to mold the child to fit a normal environment. To do this when the family environment is poor is frequently a matter of extreme difficulty. To ob-

tain the best results, one of two things is necessary: either the members of a family must be trained to elevate conditions to an average standard, or the child must be taken away and placed in an entirely new and correct environment. Even when neither of these can be accomplished, we should not cease our efforts, for much good may still be done. The school teacher and the family physician now become the ones who may be of prime benefit to the child and to society.

The teacher who has control of the child for many hours daily for the greater part of the year, by paying as much attention to the individuality of the children as to their studies may double the sphere of educational usefulness to humanity. At times we see a child with nervous tendencies, properly trained at school, practically the only stable member of a neurotic family, calmly influencing an indulged and hysterical mother to control herself, soothing the temper of an irritable father and leading the brothers and sisters along the paths of peace and happiness; a flower in an environment of weeds whose fragrance overcomes all the rankness.

The family physician, with sage advice and a firm insistence upon the laws of self-restraint and of moral, mental and nervous as well as physical hygiene, has even a broader field to work than the teacher. If he leaves no ground unturned and plows with a steady hand, the tares will cease to multiply and his harvest will be great.

We have a general standard of what a normal

child should be and those exhibiting eccentricities should have restraint or encouragement as the case may need. We must remember that it is socially and hygienically wrong to allow a child to be either too sympathetic or too cruel, too demonstrative or too reserved, overphlegmatic or overanxious, overcredulous or oversuspicious, or emotional to any extreme. We should also bear in mind that the child is an imitative creature in whose presence we must hold ourselves in check if we expect to have proper influence. Good advice must be backed by good example.

A daily cool bath is advisable for nervous children and their bowels should be kept regular. The laws of general hygiene as to fresh air, physical development and healthy surroundings should be enforced with nervous children, and are more to be relied upon than tonics.

An easily excitable child, responding to every stimulus, quick and over intense in its play and studies, should be dealt with calmly, kept away from crowds and made to lie down and relax every day. The school hours should be short and the child should not be allowed to compete for prizes. A child who is morbid and who shows but little interest in play or studies and who possibly shuns companionship, should be trained to take an interest in things outside of itself. Its surroundings should be cheerful, it should be encouraged to ride, swim and tramp. These children are frequently obstinate and opinionated, although bashful, and

are extremely hard to understand and manage.

In the training of nervous children let that of the boy be such as will fit him for manly pursuits and that of the girl for womanly accomplishments. Their training may be the same in many respects, but in fitting them for their occupations and vocations a difference will have to be recognized. We should remember that domestically the girl is to become the mother, the wife and the housekeeper, and this requires besides physical and intellectual development a nervous system able to stand the stress of life, and certain feminine accomplishments which go to make the good and useful woman of the family. The boy besides being trained to become the money-getter should have health, nervous poise, chivalry, and also be trained in some pursuit so that he may become the suitable head of the family. Both should have good morals.

PERSONALITY

In training nervous children, we have to consider all that has been said about heredity, environment and habit, and the causes and prevention of nervous children, and in addition, we must recognize certain especial measures and cautions. To better understand the nervous child, we shall have to add something to what has already been said about personality.

However young a child is, it has a personality all its own, and even twins are not exceptions. Al-

though, as we have said, our actions are made up by the impressions of external stimuli upon our five senses, still it is doubtful whether the personalities of two individuals would be the same if they smelt, heard, saw, tasted and felt just the same things, because their nerve cell structure is not identical. The most striking example we have of this is the Siamese twins, who, though joined together and subject to the same influences, had, from all accounts, quite dissimilar personalities.

We see, then, that the explanation of a personality is a very difficult problem. We know that heredity has a strong influence but the mechanism of this influence is not entirely clear. We often see brothers very much alike in their personal appearance, both resembling the same side of the family, and both reared under the same influences. The one is undemonstrative, wild, selfish and irreligious, while the other is affectionate, gentle, self-sacrificing and devoutly religious. Odd to say, or is it odd to say, the first brother may have the most attractive personality. Both are intelligent, but he appeals to one more. There is a feeling that we would like to win the affection of this undemonstrative individual, his wildness is condoned, there is a certain satisfaction in the sacrifice to his selfishness and there is an appeal even in his lack of religion. There are other examples. Napoleon had some of these characteristics and still had one of the most attractive personalities the world has ever known.

How are we to account for these things? Are

virtues really homely and unattractive? If so, are they not undesirable? Is beauty entirely in the eye of the beholder? Can the king do no wrong? Do we envy these people or do we pity them; do we love them and do we admire them? A thousand questions chase themselves through our minds, but the great question is, can we solve the problem? In answer to this, let me say we can approach the solution, we can partly solve the problem, but man will not for a long time be able to see all these things clearly and explain their mechanism on a physical or psychological basis. The law of mutual attraction, the occult influence of one human being over others, the appeal that makes a man lay down his life for a stranger when he would not for a friend, the presence that sways others, at times without words, cannot be fully explained.

What we can explain is that people possessing many evil characteristics who have attractive personalities are the exceptions rather than the rule, that they are conspicuous because they are the exceptions, that they usually have equally strong good characteristics to balance their evil ones, that as a rule they appeal to us not because of their faults but in spite of them, and that when this is otherwise it is not love, admiration or fear, but pity that appeals to us. We are not in sympathy with them but have compassion for them. On the other hand, their appeal may be selfishness on our part. We may delight to shine in a reflected light, whatever the color or however glaring that light, or we may

link our ambitions with theirs or adopt their ambitions when their personalities make them conspicuous and in a way a success, especially if we get our reward too. When the reward is unsatisfying or failure comes, what we thought was a most attractive and appealing personality may become disagreeable or even abhorrent.

After all, then, virtues are not homely and the personality possessed of them is really the most enduring, the most elevating and admirable personality.

All of this has a bearing upon our understanding of the child. The wayward child reaps what it sows and it is the duty of those responsible for its rearing to curb its wayward tendencies and develop what is good, even if this has to be done in a reform institution. By unreasonable sentiment and condonance we increase the waywardness and do injury instead of good.

GENERAL HYGIENE

Nervous children have to be understood if we are to help them. In their training we must also realize that it is necessary to bring them up to a high physical level, and they must be made as hardy and healthy as possible. Nervous children should have room, a reasonable amount of peace, of rest, of exercise, of regulation and a good healthy diet. They undoubtedly do better in the country or suburbs if the proper guidance can there be

given them. They should have general rules of conduct and honor to follow but should not be continuously corrected, plead with and nagged. They should get a full night's sleep and a nap during the day. They should be taught promptness and regular hours, have duties which are not too burdensome, and good, nutritious food at regular intervals. They should eat in normal quantities and not be allowed excesses of sweets and acids, and never allowed tea, coffee or alcoholics. Their meals should always be well cooked. They should be taught to eat any good, healthy food that is put before them and not be "finicky" in their appetites. They can digest one good, ordinary food about as well as another, and if they complain of indigestion the food should not be limited and eliminated to suit a poor or perverted digestion, but their digestions built up to accept any healthy food.

Nervous children should be under trained supervision. This may be accomplished by the mother becoming familiar with her duties in handling the child and having the co-operation of other members of the family, the care-taker if there be one, the teacher, the physician and the child. The child should not feel under surveillance but should be taught to be ambitious to be entirely normal, by feeling that the rest, exercise, regulation and other things in its routine are good for it.

Nervous children must not be dosed for every complaint and the cautions given about normal children as to clothing, hygiene, honor, punishment,

habit, school hours and environment must be observed with nervous children.

In conclusion, let it be understood that the three classes, the defective, the mentally disturbed and the nervous child, here described, are not entirely distinct and their symptoms frequently interlace, but the subject is so complicated that certain lines of demarcation have to be observed to get an intelligent view of the field; and whereas these lines of demarcation are often irregular and at times indistinct, still they are present.

CHAPTER VIII

DEFECTIVE AND FEEBLE-MINDED CHILDREN

MUCH has already been written of these children; still, there is more to be said. These children usually show a bad ancestry and when they grow and propagate a large percentage or all of their descendants show degeneracy. The amount of heredity defect seems to follow certain

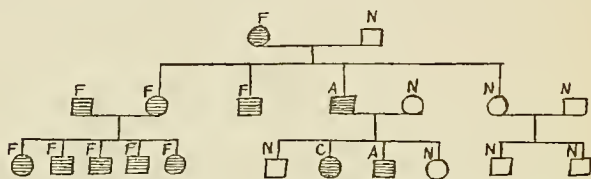


Diagram illustrating feeble-minded heredity. A feeble-minded woman married a normal man. They had four children, two of them feeble-minded, one normal, and one alcoholic. One of the feeble-minded married a feeble-minded man and had five feeble-minded children. The other feeble-minded child died before puberty. The alcoholic married a normal woman and had four children, two normal, one criminal, and one alcoholic. The normal child married a normal man and had two normal children.

Key. The white figures denote normal, and the shaded abnormal. The squares are males and the circles females. "A" denotes alcoholic, "F" denotes feeble-minded, "C" denotes criminal.

rather definite rules which have been determined by the study of these families for generations. Defective heredity may be shown by members of the family exhibiting idiocy, imbecility, feeble-mindedness, moral obliquity, criminality, insanity, pauperism, drug addictions, and what is the same thing, alcoholism. We should not forget that inherited syphilis is a frequent cause of the feeble-minded and defective child.

CLASSIFICATION

Idiocy. A profound idiot is an individual who from birth is without intellect and understanding. An idiot is incapable of attending to its physical needs and shows marked physical stigmata. The treatment of idiocy is of no avail and custodial life is the best we can do for them.

Imbecility. Imbecility may be congenital or acquired. An imbecile is weak-minded and can only partly care for itself. The mental defect is usually not noticed till the child is a few years old and there are not as marked physical stigmata as are seen in idiocy. Acquired imbecility may follow encephalitis, or inflammation of brain tissue, or meningitis causing thickening of the coverings of the brain and pressure upon the cerebrum.

After all, the difference between an idiot and an imbecile is chiefly a matter of degree and this gradation of weak-mindedness may be manifested in individuals up to the normal line. Hence, we speak

of a profound idiot, a medium grade or a high grade idiot or imbecile, a feeble-minded child or a moron. We also hear of cretins who are feeble-minded from lack of thyroid secretion, of diplegic idiots who are individuals having congenital lesions or injuries on both sides of the brain, of amaurotic family idiocy, a condition supposed to occur only among children of Jewish parentage, the cause of which is unknown, and of Mongolian idiots, so named from the appearance of their physiognomy and marked by liveliness and imitativeness, the condition being supposed to be due to some ductless gland difficulty. The microcephalic idiot or imbecile is one whose head is below the normal size, and the hydrocephalic is one whose head is increased in size. The moron is the highest grade of the feeble-minded. Many, if not most, women who lead immoral lives, develop from this class.

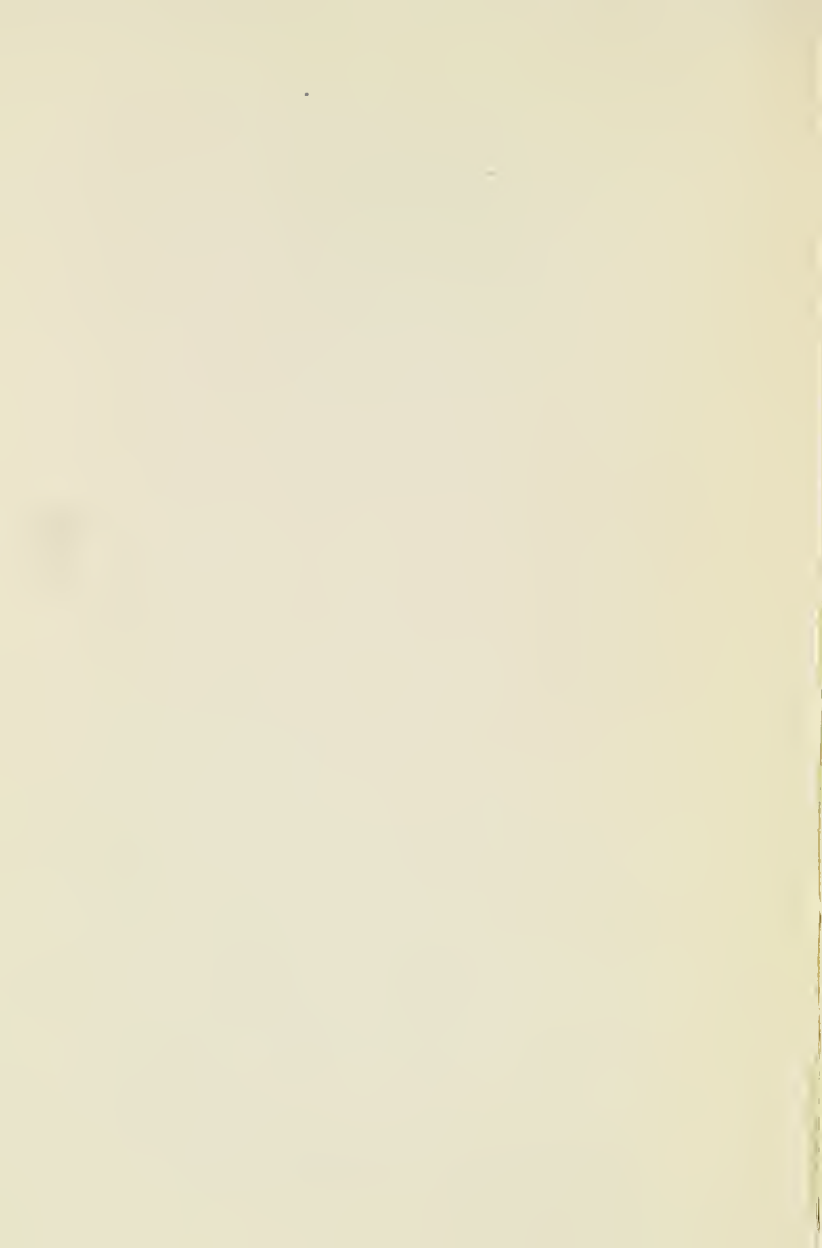
Among the acquired causes of mental backwardness in children are such conditions as enlarged adenoids, defects of vision, deafness, impoverishment, hook-worm disease, cerebral hemorrhages, paralysis, long or severe illnesses and poor environment and hygiene. Many of these children are dullards, the proper treatment of whom may prove markedly beneficial.

Children who are congenitally feeble-minded are so mentally, morally and physically, although the defect may predominate in one or the other of these spheres.

The hereditary factor in feeble-mindedness is



FEEBLE-MINDED GIRL OF IMBECILE CLASS. ACTUAL
AGE 16 YEARS, "MENTAL AGE" 3 YEARS, 6 MONTHS.
NOTE THE LOW FOREHEAD.



often shown by charts, the study of which is most interesting but need not be gone into thoroughly here. If one parent is normal and the other feeble-minded some, at least, of their children will be feeble-minded. If both parents are feeble-minded *all* of their children will be feeble-minded. (See chart.) It is easy to see that all feeble-minded persons of reproductive age should have custodial care where sex segregation is carried out. Medium and high grade idiots and imbeciles, including morons, are as a rule prolific and frequently immoral, and in consequence they, beside filling the ranks of the defective, swell the number of criminals, prostitutes, illegitimates and paupers.

Primary or congenital feeble-mindedness is an incurable disease, and while the proper institutional training is beneficial the child never becomes really normal. Secondary or acquired backwardness and defectiveness is another matter, and many of these children can be made good citizens. For most of them custodial care is not necessary, although medical attention, mental training and possibly training-school life is required. In bringing a child who manifests any of these types to the physician, the parent should be willing to have an exhaustive examination made with sufficient time for observation. If the child needs custodial care or institutional training, the parents should readily acquiesce.

Stigmata of Degeneration. Certain physical abnormalities are frequently seen in feeble-minded cases known as stigmata of degeneration. These

stigmata are numerous and only the most conspicuous will be mentioned. When they are observed the person responsible for the child should have it examined to determine whether or not feeble-mindedness exists.

Abnormalities in the size of the head and in the shape of the skull, including the face bones, should be noted. The head may be square shaped, "bullet" shaped, or there may be unusual prominences or depressions in the skull, or the head may be larger or smaller than normal, or the forehead too bulging or too low. The face bones may be unequally developed on the two sides, or some particular bone, as the lower jaw bone, may be enlarged or misshapen or too prominent.

The mouth is the site of many stigmata. The teeth may be too large, too small, too wide apart or too crowded. They may be ridged and serrated or the incisor teeth may have semi-lunar pieces missing on the cutting edge, which are known as Hutchinson's teeth. The bony juncture in the center of either the lower jaw or the upper jaw may be separated, which in the latter case is known as cleft palate. The palate may be irregular in outline, separated in the center or too high-arched. The chin may be too broad, too narrow, too prominent or receding.

The spine may be curved in any direction, "humped" or irregular. The chest bones may be too prominent in front (chicken-breasted) or barrel shaped or depressed or prominent in places. The

long bones may be too thin or too thick, too long or too short, or curved or irregular in outline. The hands and feet may be too large or too small, contracted, stubby, elongated, twisted, clubbed, or show irregularity in the shape of the main part of the digits, or one or more fingers may be missing. There may be supernumerary fingers or toes, or some of the fingers or toes may be joined together (webbed).

The pelvic bones may be irregular or not well knit and the child may limp. The thigh bones may not fit properly in their sockets. The pelvis may be too wide or too narrow.

The abdomen may be sunken (boat-shaped) or too prominent (pot-bellied) or pendent.

The genitals may be over- or under-developed or the orifices of the urethra or rectum closed. In boys one or both testicles may be undescended or the prepuce elongated.

The eyes may be too close together or too wide apart, and the same may be said of the lids. The nose may have a sunken bridge or may be abnormal in size or shape. The lips, especially the upper, may be split (hair-lip) or either upper or lower too prominent or undeveloped. The ears may be misshapen, have a nodule on their upper back edge (Darwinian tubercle) or be set too low or too high or have some of the folds missing or be of abnormal size.

When any of the above abnormalities are ob-

served, the child should be carefully tested, and if possible, treated.

BINET-SIMON TEST

It is necessary in our public and private schools to arrange the classes not so much by the actual age of the child as by its intellectual caliber if we hope to give children the best educational advantages. A child five years of age may be precocious in a class of the average age of seven and keep up in its studies. It is, however, never wise to push this child. A child of twelve may be dull and have difficulty in keeping up with the same class. In consequence, it has become the custom in our better schools to have special classes for dull and backward children. To find out the intellectual status of each child, the Binet-Simon test was introduced by two Frenchmen, and while it is not infallible, it has been of incalculable aid in classifying children according to their "intellectual or mental age" and is widely adopted by workers among feeble-minded and backward children, not only for school purposes but also to use as a standard for their life station and prospect.

The Binet-Simon, or what is usually spoken of simply as the Binet test, is a system of determining practically and easily by a graded series of tests the "mental age" of a child. A separate set of tests is used for each age from three to thirteen years, inclusive. Hence, the "mental age" of a

child is said to differ from its physical age. If a child of twelve years can only measure up to the tests for five years, its intellectual development or "mental age" is said to be five years. In calculating the "mental age" failures are allowed for in individual tests by a system of compensation, the normal standards having been worked out by Binet and Simon from the examination of a large number of children and the approximate accuracy having been confirmed both in Europe and this country by other investigators.

To illustrate, a normal child of four years ordinary or physical age is supposed to be four years in "mental age" and can answer the following questions in a specified time:

"Are you a boy or a girl?"

"What is this?" (Shown a knife, key, penny.)

"Say after me, 'seven, four, eight.'"

"Which is the longer line?" (Shown two lines of different lengths.)

If it cannot answer one of these four-year questions but can one of the five-year tests due credit is given. Books by Goodard, of the Vineland Training School, or Cornell, Director of Medical Inspection of Public Schools, Philadelphia, give full descriptions of the Binet test.

Cornell,* in discussing the diagnosis of the "mental age" of a child, says:

"Diagnosis is a judgment in which the mentality of the child, his heredity, his health, and his en-

* Cornell, *Health and Medical Inspection of School Children*.

vironment are factors. The intellectual development is first ascertained and the influence of the other factors upon it is estimated. In case mental deficiency (which is by our definition a fact, not a condition) of doubtful degree exists, the diagnosis of feeble mind or not feeble mind is the most important issue.

"The examiner who has had experience with children of foreign illiterate parents, children of illiterate negroes, deaf children, children with coexisting adenoids, deafness, and poor nutrition, children raised in old-fashioned orphanages or in almshouses, children raised by ignorant country people, and half-starved children, will make his diagnosis cautiously. He knows that present attainment is not always a safe index of capacity, for he has seen these children improve marvelously after placement in a decent home.

"Because of the slow development of a normal child's mind under adverse conditions, and the rapid development under favorable conditions, the limits of normality are exceedingly wide and elastic."

Parents who have in their ancestry feeble-mindedness, insanity, social outcasts, criminals, epileptics, alcoholics and other drug habitués, should watch their children with the utmost care for the development of any abnormal characteristics, or in fact, any disorders, physical, mental, neurological or moral, and if found at once have them carefully examined and tested. Let not false pride stand in the way. Utter frankness is absolutely necessary and by it



FEEBLE-MINDED GIRL, AGE 17, OF THE MORON CLASS. HER MENTAL AGE IS 9 YEARS AND 8 MONTHS.

your pride in the eyes of the public in after life will probably be saved many shocks.

Parents should not object but rather be grateful if their dull children are put in backward classes. They should not be blind to any of the faults of their children and should co-operate in every way with organizations having as their object child-welfare.

Communities, states and nations share this responsibility with the parents, and councils, legislatures and congress should seriously consider the defective and feeble-minded child and make it a matter of patriotic pride that this class should be limited and the unfortunates cared for. No legislative measure could be more economical. Records have been made of many families with a defective ancestry which show hundreds of their members wards of the state and hence of the tax-payer, in asylums, reformatories, jails and poor-houses. Murder, arson and theft appear in these families, and in one way or another the tax-payer contributes for them and pays dearly, as no markedly feeble-minded person is able to be self-sustaining, much less productive, and hence his support is a burden to the normal individual.

CHAPTER IX

CERTAIN NERVOUS DISEASES OF CHILDHOOD

SOME of the diseases of the nervous system of childhood have already been mentioned. In this chapter we shall confide ourselves chiefly to a brief description of the premonitory symptoms of certain of the more or less common nervous diseases. The diseases mentioned are selected because, through ignorance of them, a child may progress to a state which makes treatment much more difficult.

Brain Tumor. Brain tumors frequently go unrecognized until a late stage of the condition. Their cause and origin is obscure. They may occur during any period of childhood, and whereas they are always extremely serious, still early recognition may make the case operable, while delay may render it hopeless. The chief symptoms which may be recognized by the family are nausea and vomiting especially when not related to food, headache, vertigo and changes in vision. Depending upon the location, paralysis in one or more extremities or of one or more of the cranial nerves, may occur. The cranial nerves are the nerves which supply vision,

smell, hearing, taste, movements of the eye-balls, sensation to the face and facial cavities, movements of expression to the face, and movement of the soft palate, of the tongue and lips. The symptoms of brain tumor usually come on gradually and not all at the same time, and the child frequently is mentally disturbed. At times the pupils are widely dilated or markedly contracted, and sometimes the eyes will be observed to have rapid, jerky movements when suddenly turned. The vertigo is sometimes so great that the child may fall. It is not, of course, expected that the parent should make a diagnosis of brain tumor, but only note the danger signals.

Brain Abscess. A brain abscess may show any of the symptoms of a brain tumor, and usually also change in the pulse rate and temperature and more early clouding of consciousness. Brain abscess follows an infection somewhere else in the body, most frequently ear disease.

Brain Injury. A physician should be sent for and the child carefully observed after every severe blow on the head. Brain injury may cause a concussion, with confusion or stupor, or there may be a fracture of the skull. The skull, especially the base, may be fractured without outside evidences of skull injury. Cerebral hemorrhage in a child rarely ever occurs except from brain injury. The X-ray is our most valuable means of determining skull fractures. If a child's head is injured the best thing to do is to put it quietly to bed, exclude all persons from the room,

except the one or two attending, and send immediately for a physician. Delay in taking these precautions may mean death to the child or future brain trouble, especially epilepsy.

Meningitis. Meningitis is an infection of the covering of the brain or spinal cord which may occur in many forms and is always a serious condition. It may be due to tuberculosis, or be an acute infection known as epidemic meningitis, or it may follow nearly any of the acute diseases of childhood. It may be rapid or gradual in its onset.

The symptoms of the tuberculous form appear gradually and of the epidemic form suddenly. In meningitis of gradual onset the child usually shows loss of appetite, malaise, very slight temperature, headache or a sense of head pressure, dilated pupils, loss of weight, and then as the symptoms progress, more elevation of temperature, stiffness of the extremities and back, nausea, vomiting, restlessness and peevishness, and then the condition continues, with retraction of the spine, especially the head and neck, convulsions, stupor and coma.

Acute meningitis has very few premonitory symptoms and the rigidity, retraction, convulsions, stupor, coma and temperature appear with more or less suddenness. It should be remembered that meningitis may appear during the course of other illnesses. Any symptoms which would make you suspect meningitis should at once be called to the attention of the physician.

Epilepsy. Until recent years, epilepsy was con-

sidered practically an incurable disease. Fortunately, more knowledge upon the causation of the attacks has been gained, and in many instances certain classes of epileptics can be markedly improved, or even cured. Epilepsy due to direct injury to the brain is known as Jacksonian epilepsy and is a surgical condition, the result depending upon the character of the injury, its correct localization and the success of the operation.

It should be remembered that a convulsion itself is simply a symptom of the underlying condition known as epilepsy. It is well, however, to have a general idea of epileptic manifestations. We may divide them into three classes: the major convulsions, the *petit mal* or minor attacks, and the epileptic-equivalent attacks.

In the major convulsion, the patient may or may not have a warning of the onset of the attack. This warning may consist of peculiar movements or various sensations or some mental disturbance, or simply an indescribable bad feeling. The attack occurs suddenly and the patient falls unconscious. He may or may not pass urine or feces during the attack. The child becomes at first rigid and then goes into convulsive movements with the face usually flushed and with difficulty in breathing. He may or may not cry out just as the attack comes on. He usually froths at the mouth and frequently bites the tongue or cheeks. The attack is brief, lasting only a few minutes before consciousness returns, and the patient may be able to get up and go about in a very

short while or may go off into a sleep, or feel dull and heavy afterwards, or have a headache.

The *petit mal* or minor attack consists of only momentary loss of consciousness, accompanied by a peculiar stare. The patient may be talking and suddenly cease conversation for a moment and then pick up where he left off, or the attack may be a little more severe than this and appear to be an incomplete regular convulsion.

The epileptic equivalent may consist of impulsive acts, such as sudden anger, assault or action. The patient may jump up and whirl around, or suddenly take off an article of clothing without knowing what he is doing.

Epileptic attacks may occur either during the day or at night. One important thing to remember is that most of the convulsions of infancy and childhood are epileptic in character. A child who has epileptic attacks also has a brain cell defect and the attack itself is usually due to some sudden change in circulation and may be brought on by excitement, over-eating or improper eating, or over-exertion. Excitement and indigestion do not cause epilepsy but simply cause the attack. Bad heredity, disease or injury which has caused a brain cell lesion must be present, and people without this brain cell factor cannot have attacks. It is only too often that we hear of a child having a convulsion and of the physician telling the family that it is simply due to indiscretion in diet, and giving it a purge and not putting it on the proper treatment until other at-

tacks follow. These may come at short or long intervals. The time to put a child under treatment for epilepsy is immediately after the first attack. The earlier the treatment is instituted, the better the result. The brain cell difficulty which is the true cause of epilepsy may be due to inherited syphilis, and if so, proper treatment is of marked benefit; or it may be due to pituitary gland deficiency, when the feeding of pituitary gland gives good results; or it may be due to some forgotten injury, and operative procedure may be indicated and beneficial; or it may be due to some constitutional condition which renders the brain cells toxic and injured; or it may be due to hereditary defect. No disease deserves more careful investigation and more persistent trial of treatment than epilepsy, and year by year beneficial results of treatment are becoming more manifest. Chronic cases of epilepsy are more difficult of treatment and at times the disease affects the mind so that institutional life is necessary.

Little's Disease is a spastic paralysis of the arms and legs, or sometimes only of the legs. It is supposed to be due to birth pressure and is usually noticed during early infancy. The muscles become rigid and the reflexes increased. The infant often has difficulty in sucking. In lying down, the toes point downward with the ankle and other joints stiff, the degree of stiffness depending upon the severity of the condition. In walking, the legs lock and overlap and the movements of the extremities are irregular and inco-ordinate. These patients are

often "cross-eyed" and may have epilepsy or serious mental defect, although at times they are bright. They usually have difficulty in speech, due to the fact that they try to speak on inspiration instead of expiration. These cases can be much benefited at times by stretching and various exercises. Recently, a bilateral operation upon the skull, giving the brain more room for growth, has proven beneficial.

Spinal Cord Injury and Disease. We have spoken of meningitis, which may be considered as a cerebro-spinal disease. There are other diseases and certain injuries to the spinal cord which are more or less common to childhood. The spinal cord may be affected by trauma. This injury may cause hemorrhage, inflammation or pressure on the spinal cord. In cases of fracture of the spinal column causing hemorrhage, the injury is usually recognized and should be treated as a surgical condition. If after injury to the spinal column inflammation of the cord takes place or the cord becomes pressed upon, paralysis occurs below the point of injury. These conditions belong to both surgery and neurology. If the lesion is obscure, the X-ray will show the extent of injury to the column but not to the cord, because it is soft tissue. If the inflammation or pressure completely occludes the nerve impulses traversing the spinal column, then the paralysis is complete. If the lesion is not entirely transverse, motor power is affected if the anterior part of the cord is injured, sensation if the posterior, and muscular spasticity occurs if it is confined to the lateral



POSTERIOR SPINAL CURVATURE, FUNCTIONAL IN CHARACTER, DUE CHIEFLY TO LONG CONTINUED FAULTY POSITION.

columns. Spinal cord diseases can be treated best if the patient is in a hospital.

Spinal Curvature. Spinal curvature may belong to orthopædic surgery or to both neurology and orthopædics. Children very frequently get a curvature of the spine from habitual improper positions; for instance, too low school desks; or the spine may become curved from debility, as after a long illness. Curvatures of this character are known as functional and are corrected by massage and exercises to develop the muscles of the back and straighten the curve. Organic curvatures of the spine occur when the bone is diseased. The most frequent cause of organic curvature is tuberculosis of the spinal vertebræ. The spine may be curved in any direction; that is, anteriorly, posteriorly or laterally, and if neglected, in organic curvatures a knuckle of bone may appear prominently in the back, or the back may be sunken in a certain location, or what is known as "hump-back" may occur, or the spine may be so curved laterally that the patient cannot straighten the back and hence limps, or the bones may be so diseased that they give way and cause pressure on the cord, followed by paralysis below the point of pressure.

To get the best results in spinal curvature, treatment must be instituted early. All children should be inspected at times to see that their backs are straight. If in standing or walking one shoulder is noticed to be higher than the other or one hip higher than the other, or if the child bends forward, back-

ward or to either side, the condition of spinal curvature should be carefully investigated. In tuberculous lesions of the spinal column the child may have night cries, the muscles of the back are at first rigid, and flexibility of the spine is interfered with; when the child sits it frequently puts its hand on the seat so as to raise its shoulders and thus to a certain extent rest the spinal column. In tuberculosis of the spine it is often necessary to put the child to bed with the spine stretched by apparatus. Casts and braces may be necessary. Whatever the proper treatment is, it should be carried out absolutely and patiently by the co-operation of the family with the physician.

When paralysis occurs from spinal cord trouble it must be remembered that bed sores frequently appear. It is of extreme importance to keep these children clean and dry and the bed clothes smooth. Paralyzed patients are much less apt to develop bed sores if made to lie upon a woolen blanket which absorbs moisture, than if they lie upon a sheet.

Infantile Paralysis. Infantile paralysis, known medically as poliomyelitis, is an acute disease of childhood, chiefly affecting the anterior columns of the spinal cord. The onset may be marked by a slight temperature and stomach and bowel upset. It may be so sudden that the child feels sick upon going to bed, has a slight fever and is found to be paralyzed in the morning. Previously healthy children are often stricken. The disease may occur in



b.—INFANTILE PARALYSIS (SAME CASE AS a). NOTE THE SUPPORT GIVEN BY RESTING THE FEET ON A STOOL AND TYING A TOWEL LOOSELY AROUND THE KNEES.



a.—INFANTILE PARALYSIS OF LOWER EXTREMITIES.
NOTE THE WEIGHT OF THE LEGS DRAGGING ON THE
KNEES, AND THE FOOT ON THE ANKLE.

sporadic instances; still these are rare, and children are not usually liable to the condition unless an epidemic is present.

The onset of infantile paralysis is not always as described above, and the condition may occur during the course of any of the ordinary diseases of childhood, or the onset may resemble various other diseases. When other cases are in the community, all sick children, whatever the nature of their malady, should be tested for weakness in their extremities. The condition is usually preceded by vague pains, headache, hypersensitiveness and fretfulness. When paralysis occurs it is at times overlooked because the patient is sick in bed, so during an epidemic it is well to see that any sick child can move its extremities. In the early part of the disease, symptoms of meningitis are, at times, present. After the acute stage is over, the temperature and constitutional symptoms subside and the child is left paralyzed. After a few weeks, the paralysis usually improves, either slightly or very markedly. A few of the cases entirely recover. For residual paralysis braces are usually required. The whole condition is a serious one and the prospects of improvement are much enhanced by the early institution and long continuance of treatment.

Friedreich's Ataxia. This disease is due to defective development in the spinal cord and is sometimes present in several members of the same family. Boys are more frequently affected than girls. The true cause of the condition has not been deter-

mined. The disease may appear very early in childhood, but usually the symptoms are not noticed until the sixth or eighth year when the child's movements become inco-ordinate and the muscles stiff so that the child staggers in walking and places the feet wide apart to maintain its balance. The spinal cord is frequently curved and the feet usually deformed. As a rule, the eye-balls tremble and there is a tremor of the extremities. Speech becomes slow, scanning and indistinct. The onset and course is gradual and there is no cure for the condition. The patient usually dies before adult age is attained from some intercurrent disease.

Erb's Paralysis, also called *Birth Palsy*. This is a condition due to pressure during the time of birth and is limited to the muscles of the upper arm and shoulder. One or both arms may be affected but usually only one. The condition is manifest at or very shortly after birth. The arm hangs limp at first but later becomes slightly rigid. The weight of the arm upon the shoulder joint relaxes the ligaments. At times the condition will get well of itself but all cases should be treated early. The arm should be put in a sling to prevent the dragging upon the joint of the shoulder, and massage and electricity should be given.

Chorea. Chorea, or St. Vitus' dance, is a disease occurring during childhood, which more frequently makes its appearance in the spring of the year. The attack may be acute and last only a few weeks, or it may be chronic and last for years.

Nervous children of neurotic families seem to be more susceptible. The disease usually begins with twitching which may be of the face, neck or extremities. These movements are not rhythmical but spasmodic, and often the first thing noticed is that the child stumbles easily and drops objects. These irregular movements may progress until the child is in constant arrhythmical movement. Whereas these movements cease during sleep, still when the child is sitting or lying down it may rub sores on its elbows and even the hair from the back of its head. Speech frequently becomes slurring and indistinct, the child nervous and emotional, and the heart rapid and thumping and possibly irregular. In very severe cases, the child may have a temperature and even serious heart trouble. Investigation has shown that a large percentage of these cases are connected with acute rheumatism; also, that the infection which causes both St. Vitus' dance and inflammatory rheumatism almost always enters the system through diseased tonsils. As a rule, the disease is not dangerous to life but many severe cases die of heart complication with high temperature. It is, therefore, important to keep the case from becoming severe. All cases should be put under treatment early, with especial reference to the condition of the tonsils. In fact, many cases can be aborted by prompt and complete removal of diseased tonsils. When this is done the results are most satisfactory. The child has to be kept quiet, isolated and not allowed to have company or toys until the movements

get under control. Certain medicines are also very efficacious. After an attack of chorea the child should be carefully watched, its general health built up and kept at the highest standard. Often country life is most desirable for children who have had chorea. One attack of chorea predisposes to subsequent attacks unless the tonsils are removed.

Neuralgia and Neuritis. Children are not very subject to neuralgia or neuritis. Neuralgia might be defined as a condition of irritation of a sensory nerve, the pain of which is spasmodic, decreased by pressure and not accompanied by external evidences. Most of the neuralgias which occur in children are reflex in character and the underlying condition should be determined and corrected.

Neuritis is an inflammation of a sensory nerve. The nerve is tender to pressure and the condition is frequently accompanied by redness, swelling or changes in the appearance of the skin or nails. Neuritis may be confined to one nerve or many nerves may be involved. Multiple neuritis is more common in childhood than neuritic conditions of one or a few nerves. Neuritis may result from injury of the nerve, but the neuritis of childhood is usually due to some constitutional disturbance or toxin. It may follow influenza or any other acute infectious disease. It is not infrequently an aftermath of diphtheria. Pain and tenderness along the course of nerves, and redness and glossiness of the fingers or toes, should make us suspect neuritis and have the child given medical attention.

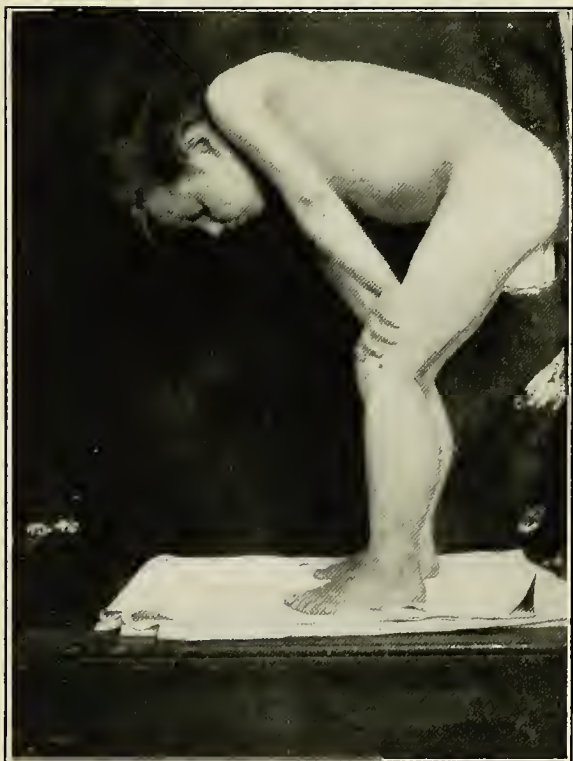
Hysteria. Hysterical manifestations during childhood are not common until the period of puberty is approached. Hysteria is usually seen in members of neurotic families and its manifestations are very numerous, as it may simulate many diseases. People with hysteria rarely have the attacks when alone but crave sympathy and desire an audience. They may have uncontrollable laughter or tears which commonly alternate, or conditions simulating paralysis, epileptic attacks or meningitis. The diagnosis of hysteria is so important and difficult that children exhibiting any unusual nervous symptoms should be put in the hands of a physician and the diagnosis should not be attempted by the family.

Neurasthenia. Neurasthenia is a psycho-neurotic fatigue. This disease is rare during childhood but may be congenital or acquired. The patients have difficulty in concentrating and the attention cannot be held for any length of time. They usually have vague apprehensions and are over-anxious about themselves. Physically, they tire easily and are not able to keep up with other children. Their muscles do not become well developed and the usual hygienic measures do not seem to be of much benefit. These children show a chronic debility, usually accompanied by constipation, and more or less indigestion, and they are susceptible to contagious diseases. It is doubtful if congenital neurasthenia is curable but we can do something in guarding and protecting these children as far as possible. Acquired neurasthenia is so rare in childhood that we will not go

into the condition except to say that children who have been normal and become easily fatigued, over-anxious and lose their power of concentration should be put under observation.

Occupation Neurosis. This is not extremely common in children, but those who work at tedious occupations where the same movement is repeated are susceptible to a fatigue, accompanied by pain and followed by an inability to perform the movement, which is known as an occupation neurosis. There is undoubtedly a psychic element in the condition and when the patient begins to think too much, consciously or subconsciously, about the condition, it becomes decidedly worse. Prolonged use of the piano, typewriter or pen are the more common causes of occupation neurosis, although textile workers, type-setters, box-makers, etc., may have it. The treatment consists in stopping the occupation which causes pain in the muscles called upon to perform the duty, and of massage and general hygienic measures.

Pseudo Muscular Hypertrophy. This is a condition seen in childhood and usually noticed between the fourth and eighth years of life, in which some of the child's muscles look exceedingly well developed and strong but in reality are weak. This is due to fibrous tissue enlargement and not muscle tissue growth, and these children have difficulty in lying down and in getting to an erect position. They usually do so by getting on all fours and then "climbing up upon themselves" by putting their hands upon



A CASE OF PSEUDO MUSCULAR HYPERTROPHY. NOTE ENLARGEMENT OF MUSCLES OF CALVES AND BACK. THIS BOY WAS SO WEAK, HOWEVER, THAT HE HAD TO ARISE FROM THE RECUMBENT TO THE STANDING POSITION BY "CLIMBING UP UPON HIMSELF" IN THE MANNER SHOWN IN THE ILLUSTRATION.

their knees and then thighs until they push themselves into an erect posture. They are weak and tire easily, and the condition often affects two or more members of a family. The cause of it is unknown and treatment has but little effect.

Headache. Headache is not a disease but a symptom. It may be an early indication of brain tumor or meningitis or any acute disease of childhood, or it may come from the absorption of toxin from infective areas, as abscessed teeth or tonsils, or it may be due to malassimilation, indigestion or constipation, but probably the most frequent cause of headache in childhood, especially if it is continued, is *eye defect or eye strain*. All children having headaches should have their eyes carefully examined. Sick headaches, neuralgic headaches and high blood pressure headaches cannot be classed as disorders of childhood, although sick headache, or migraine, appears at times before puberty and is an hereditary condition. Malaria and rheumatism are at times the cause of headaches in children. Children who have headaches should never be dosed with headache medicines or powders. The various effervescent headache remedies, tablets and powders which are patented usually contain acetanilid which is a direct circulatory poison and dangerous to adults but especially to children. It is well to have all headaches in childhood which do not yield to a simple purge investigated.

Tetany. Tetany is a disease characterized by contractions of the muscles, and may be mistaken for

hysteria or epilepsy. The spasm is often accompanied by pain or tingling. Exposure to cold, acute indigestion and diarrhœa are often the exciting causes of the attack, while rickets or para-thyroid gland deficiency seem to underlie the condition. The attacks come on suddenly and may be frequent. The hands are contracted, often in a cone shape, and the thumbs held in toward the palm, the arms are sometimes held close to the body and strongly flexed at the elbow. The toes are clamped down and the legs extended at the knees and the feet at the ankles. The head may be bent forward or backward and the eyes may be fixed. The patients are not, however, completely unconscious. Most cases recover under the proper medicinal treatment.

Diphtheritic Paralysis. This means a paralysis of various parts, following diphtheria. It has been supposed at times to be due to the administration of antitoxin, but there is no proof of this and the paralysis is due to the toxic substance formed by the germs of diphtheria. It is gradual in onset and usually appears shortly after recovery from the disease. The paralysis may occur in the limbs or in the eye muscles, but most frequently the throat muscles are affected. It sometimes affects the heart, and when this occurs it is a very grave condition. Any muscular weakness or weakness of the voice occurring in a child shortly after diphtheria should attract immediate attention. Most cases recover with careful nursing, massage, electricity and medicinal treatment.

Eye Defects. Eye defects in children frequently cause nervousness, and one should be on the watch for poor vision, squint, a "cast" in the eyes, pain in or above the eyes, headache at the back of the head, incorrect position of the head, odd positions in reading, or holding reading matter too close to the eyes. If any of these things are noticed, a competent oculist (not an optician) should be consulted, and if the child needs glasses no false pride on the part of the parents should interfere.

CERTAIN MENTAL DISEASES OF CHILDHOOD

Of the mental diseases of childhood only a few will be mentioned. We have already dealt with the child who is defective and feeble-minded and with many of the mental conditions and peculiarities of childhood. Children rarely show developed forms of insanity, not including, of course, idiocy and feeble-mindedness. We have considered elsewhere the deliriums and toxemias occurring in the course of or following acute diseases. There are three forms or types of insanity which only appear in their developed form after puberty but which are developmental in character, and peculiarities of childhood can be traced in these patients. How much better is it to try to recognize, as far as possible, the type during childhood, and anticipate, or at times obviate, insanity later?

Paranoia. This is a form of insanity occurring usually in families exhibiting various mental trou-

bles in some of the members. In adult life it is incurable and forms from three to five per cent. of asylum admissions, while many milder cases occur but are not confined to institutions. Paranoia is marked in the adult by suspicion, egotism, litigation, systematized delusions of persecution, frequently change of personality, grandiose ideas and sometimes by murder and arson. In children, a tendency toward this disease is shown by certain resentfulness, inability to get on pleasantly with other children, bad habits, egotism, unabashedness, willfulness and superficial brightness but with a lack of real judgment. These children are often considered brilliant by their parents and teachers because of a certain precocity, but their original reasoning is not sound. We cannot say that all of these children will be insane, as in fact many will not overstep the borderland, but all of them are mentally disturbed and require close observation and guidance.

Dementia Præcox. This is a form of insanity making its appearance usually about the time of puberty and occurring, as a rule, in defective families. Many of these patients become so insane that institutional life is imperative. In the adult, they may or may not have ideas of persecution, they lack judgment, they cannot apply themselves or be self-sustaining, they cannot originate, many have disgusting habits, they are unaffectionate and asocial and develop stereotyped movements and assume cataleptic positions. At times they are violent and their lives are controlled by hallucinations and delu-

sions. In the child, tendency is shown toward this condition when the child is unsociable, seclusive, sensual, perverted, willful, does not like games, has untidy and bad habits, is unaffectionate, does not care for pets and does not take ordinary interest in things normal children do. If, as the child gets older, these idiosyncrasies increase and the child will not help about the house, neglects school, becomes more lazy and more untidy, more asocial, and is found standing or sitting in peculiar attitudes over long periods of time, beginning dementia is almost certain. Although these children can never be made normal, still much may be done in warding off real insanity, and at times the dementia can apparently be arrested for years.

Manic-Depressive Insanity. This is a form of insanity which, in the adult, is marked by alternating periods of depression and exaltation. During the depressed period the patients are melancholy with delusions of unworthiness and of having committed imaginary sin. They are apprehensive and seem to have given up hope here and for the hereafter, and many commit suicide. They are utterly miserable, dejected and dispirited and may have hallucinations in addition to their delusions of unworthiness. This depression may be followed by a period of more or less normality for a longer or shorter time, and then they begin to be exalted, have a sense of well-being, obstacles have no significance to them, a chaos of ideas flit through their minds, they become maniacal and dangerous, and ever-changing delu-

sions occupy their attention. Of course, many milder forms are observed in persons who never go to these extremes and many individuals have periods of "blues" alternating with a period of a sense of well-being, who are not insane and are useful citizens. Children show tendencies toward this trouble not so frequently as they do toward paranoia and dementia præcox, and when they do, all that can be observed are spells of "the blues," sullen periods and low spirits lasting for a certain time, and after a while a period of both psychic and motor activity. The slightest toxic condition may bring on depression or the alternations may occur with more or less periodicity. A great deal may be done for this condition and children exhibiting these tendencies should be actively treated.

CHAPTER X

PUBERTY AND ADOLESCENCE

*P*UBERTY. Puberty occurs at that age when generative functions begin and the child assumes the characteristics of the adult. This age is usually fourteen years in boys but may be delayed as late as the sixteenth or seventeenth year. Puberty in the female is marked by the onset of menstruation. Its age of onset is quite variable. In the Southern states it makes its appearance between the twelfth and fourteenth years, and in the Northern states between the fourteenth and seventeenth years.

Adolescence. Adolescence embraces the period from puberty to maturity; that is, from puberty to about the twenty-first year in both males and females. This period is one of the most important in the human life, and is the period in which both character and characteristics are chiefly formed.

In treating the subject of nervous children we cannot omit either puberty or adolescence. The child remains a child up to the time of puberty, and then "leaps rather than grows" into adolescence, and from this time to maturity the transition is more gradual, although, as pointed out by Stanley Hall, it is much more rapid in America than elsewhere.

Puberty in the Male. Puberty in the male is marked by the appearance of body hair, by increased rapidity of growth and the development of muscular strength, by marked changes in voice, when the youth is said to have the "goslins," by the enlargement of the genitals and the capability of generation, by love based on sex discrimination, and by the acquisition of various traits of manhood.

Puberty in the male is not as sharply demarked or as quickly pronounced as in the female. The boy who has previously been a child begins to imitate the man and at this age is exceedingly plastic. His thymus gland has ceased its activity and his thyroid, pituitary, adrenals and testicles seem to take on new vigor in their internal secretions. He should know of the onset of puberty and what changes to expect. This period of his life is not infrequently marked by an increase in mental vigor and stimulation of ambition, and sometimes by a distinct mental upset chiefly based on ductless gland disturbance. In pathological cases the boy becomes emotional or over-religious in his tendency, or indiscreet sexually. Puberty in the male being mainly the inauguration into adolescence, the consideration of the various changes mentioned will be discussed under the head of adolescence.

Puberty in the Female. Puberty in the female is much more of a physiological epoch than puberty in the male. Up to this time, girls and boys have very much the same traits and can take the same exercises and enjoy the same sports, although the girl has, of

course, shown marked sex distinction in her fondness for doll-babies, dress and domestic amusements. At the onset of puberty, the girl begins to develop very rapidly. Her thymus gland has ceased its function, while her other ductless glands take on renewed activity. Her limbs become more rounded, her breasts enlarge, hair appears under the arms and over the pubes, and the great physiological event of her life takes place in the onset of menstruation. If she has not been informed upon this subject, the first appearance of menstruation will be a tremendous nervous shock to her, often having a deleterious influence all through her life. She may not ask an explanation, or she may ask it and get a very poor reply. Not having been warned, she may take a cold bath or expose or over-exert herself, which may affect her menstruation. Unless she is informed, she may possibly be ashamed of the occurrence, or much frightened, and become self-centered, seclusive and neurotic. Therefore, first of all, it is important to inform the girl approaching the age of puberty that at about a certain age she will begin to show symptoms of increased development and that one day she will notice blood stains, and that as soon as she does she should notify her mother or some responsible person of the fact. She should be told that this condition occurs to every woman, is natural, normal and physiological, and should appear once in every twenty-eight days; that it helps to make a woman stronger mentally and physically and to give her

the characteristics of womanhood; that it is nothing to be ashamed of; that it enables her to fulfill in the future the noble function of motherhood, and that to establish her periods normally she must at this time not over-exercise or study too hard, or take cold baths, or go to dances, and that she must not be nervous, frightened, alarmed or ashamed. If in twenty-eight days the second menstruation does not appear, she should notify her mother or the responsible party, but there is no great cause for uneasiness unless a good many periods are missed. During the early establishment of this function, the girl should be well nourished, have an abundance of rest, be relieved of care and responsibility, and if there is any anatomical reason or any sickness that interferes with it, she should be under the treatment of a skilled physician.

The observation of these simple cautions will save many a girl from a life of misery. Neither the medical profession in general nor the laity pay nearly enough attention to the onset and proper establishment of menstruation. Girls at this period are frequently off at boarding-school and have been uninformed or misinformed, and during this more or less trying time subject themselves to study, competition and exercise which they are not in condition to take. In fact, many physicians believe that it is unwise for the girl to be at boarding-school until menstruation is thoroughly established. If she ever needs the care and attention of a sensible mother and the guidance of a conscientious physician, she

needs it at this time. Even savages recognize the importance of this period and institute rites and a régime for their females.

The delayed appearance or sudden suppression of menstruation, sudden changes in ductless gland secretions, emotional shocks, frights, severe colds, etc., frequently throw the susceptible girl into a nervous or mental condition which marks the onset of hysteria, neurasthenia, physical debility, and in the severer cases dementia præcox, or manic-depressive or some form of toxic insanity. To prevent troubles of this kind, it is well just before puberty to have the urine carefully analyzed to determine any kidney disturbance, and the blood examined to find out whether anemia is present. Approaching this period, especial attention should be paid to the nourishment, regulation of habits, exercise, and the elimination of excitement.

Various other conditions marked by the onset of puberty will be dealt with in considering adolescence in the female, as the period of puberty is simply the starting-point of adolescence.

Adolescence in the Male. This period, lasting as previously mentioned from about fourteen to twenty-one years of age, is marked by great increase in muscular development and strength. The youth turns to various forms of athletics and it is important to see that these exercises are regulated under reasonable supervision. Many young men are permanently injured by attempting physical tasks beyond their endurance, which result in en-

largement of the heart, rigidity of the muscles, and injury from accidents. Youths ignore danger and are often too ardent in their sports. A thorough medical examination should be made, from time to time, and all athletic exercises regulated accordingly. A certain amount of danger has to be accepted, but games like foot-ball should be so regulated that the element of personal injury should be lessened as much as possible. It is indeed very questionable whether it is justifiable for youths to indulge in the extreme tests required by match games of foot-ball, boat races, swimming races, foot races, and exhibition gymnastics as usually conducted. Golf, tennis and base-ball matches are less severe. On the other hand, the youth should not be denied the privilege of rough games which develop his physical strength and manliness. He should learn to row, to shoot, to swim, to fish, to ride, to skate, and to excel by reasonable competition. He should spend a part of his time at least in the country and forest, and the various camping expeditions are of great benefit. No organization deserves the hearty support of the parents of boys more than the Boy Scout movement.

During the period of adolescence, many youths do not take enough exercise. Over-study at school and college, too exacting a curriculum, ambition to excel in class and at examinations, may demand close application at the expense of exercise, and eventually of health. Youths who go to work early in the office and factory are especially liable to undermine

their physical constitutions and nervous stability.

The average youth indulges in late bed hours, due to a release of parental control and the attraction of night amusements. He often eats irregularly and with far too great rapidity. He frequently is under-clothed, due to a scorn of thick underclothes and overcoats. He may expose himself to all kinds of weather because he wishes to "harden up" or continue to endure exposure because he thinks it is "girlish" to complain. He indulges in smoking because it is "mannish" but he has not enough manly control not to use tobacco to excess. Alcoholic and other indulgences are often explained in the same way. The adolescent youth, like the young colt, free, full of caprice, exuberant of life, is hard to break to harness, and in training him his elders must be tactful, cautious and kind, or else he will be cowed and slow. His spirit must be preserved but he must learn to wear the harness of conventionality and to go smoothly and swiftly along the road of civilized enlightenment.

Of all the mistaken ideas that misguided elders have ever indulged in, the one that a youth must "sow his wild oats" is the most erroneous. Tobacco to excess, alcohol, gambling and immorality here sow tares in virgin soil, and weakness of will, nervous and mental disorders, venereal disease, unhappiness and vain regrets will be the gnarled and stunted harvest which has choked out the good.

Self-control and will power, while previously instilled, should be developed during this period, and

if they do not now become well established it would be almost a miracle to gain them after maturity. To pamper the boy, to indulge him, to cower him or to send him out to seek his fortune, is to warp him. Boys during this period who are hard to control at home, or at the ordinary school, may make fine men if put under the discipline of a military school or if sent on an engineering corps. If the youth becomes anemic, loses flesh, is not sociable, or develops bad habits, he needs medical attention.

Adolescent love is the sweetest, the most romantic, the most exaggerated and the most imaginative of human emotions. But teach the boy to let this love have a sane ideal of womanhood, to be attracted only by good qualities, to be patient and worthy. He will probably sooner or later become disillusioned. Do not let this disillusionment be too sudden and without warning. Be his confidante and then you may be his guide.

During this period, if the youth is at home or if he is away, keep in close touch with him, aid him in selecting good companions, teach him chastity, teach him to be honorable in every way, and if he shows abnormalities mentally, physically or morally, spare no effort to have the defects remedied before they become too firmly rooted. This is also the period of vocational selection. Let us give wise counsel and aid him to select a vocation which is adapted to his proclivities, his station, his health, his nervous equilibrium, and one in which he has an opportunity to make a success.

Adolescence in the Female. We have spoken of the difficulties occurring at the onset of puberty, but the girl must also be carefully watched from this time to maturity. As far as I am able to ascertain, the girl has never been properly cared for during this period in all the history of the world, and it is doubtful if her present environmental civilization is much in advance of the past. There are signs, however, of improvement and reasons for hope. Girls of various classes have to be protected during this time by different means.

The subject of the adolescent girl is a large one and embraces dress reform, occupation, love, exercise, hygiene, deportment, and many other things which it is not within the scope of this chapter to embrace. We will, therefore, confine our remarks chiefly to those matters which, directly or indirectly, have the greatest bearing on the girl's nervous system.

During this period, the girl should take an abundance of outdoor exercise and join in the usual sports, but these should always be curtailed during her menstrual period, and at all times she should stop short of exhaustive fatigue. She should get at least eight hours of unbroken sleep and should eat three good meals a day and usually nourishment between meals. She should not indulge in exhaustive dancing or dancing during her menstruation, and at all times should avoid late hours, eating large quantities of sweets, taking as stimulants coffee, tea or alcohol, reading loose literature, tight lacing,

wearing clothing insufficient to give reasonable warmth, wearing furs except in bitter weather, and wearing high-heeled shoes. Girls frequently, through lack of convenience or a false modesty, do not attend to normal body functions, and in time they become habitually constipated and suffer with bladder troubles. Most working girls are not allowed enough time off for air and exercise, especial toilet arrangements are frequently not made for them, and many are required to stand long hours at a time. Women shoppers, especially previous to holiday seasons, would do well to shop early, be decisive in their selections, and in every way try to lessen the burden of the shop girl.

The adolescent period is by far the most attractive period of a woman's life. With what amazement we see the awkward girl turn into the fresh, beautiful, impulsive, confiding, sweet little woman! But, alas, with what horror we watch some of them lose the freshness of youth, become anemic, self-centered, complaining, nervous, emotional, hysterical and frail, while others still, through some pernicious influence of heredity, disease or environment, become the blighted buds, the worm-eaten fruit, or the poisoned weeds in the garden of young womanhood.

Every girl should learn the essentials of house-keeping, cooking, sewing, care-taking, music, art and literature, whatever her other accomplishments or vocation may be, and last but not least, she should have a reasonable knowledge of sociology, sex re-

lationship, and racial betterment. Many a good woman leads a more or less useless life because her horizon is too limited, and a life without broad interests is never a normal life and is apt to be a self-centered and neurotic one.

Girls at this period form strong attachments, both for other girls and for young men, and this is part of the process of life if kept within normal bounds, but the love of the adolescent girl, like that of the youth, is short-lived and usually it is to be regretted when it culminates in matrimony during this period. It is almost needless to call attention to the disastrous results of most runaway or very early matches, or to the terrible catastrophes of betrayed confidences. Fortunately, the love of the adolescent girl is normally more illusive and reticent than that of the youth, and her innate modesty is both a safeguard and an attraction. Fashions, customs and habits which lower the gates of modesty open the way to devastation. A sexual fright, shock or psychic trauma may by its horror, shame or repression cause a train of nervous and mental symptoms which may untune the harmony of the nerves or disorder the intricate mechanism of the mind. We should ever remember that the girl is destined to be the future mother and the boy the future father, and that we are responsible in training them for these great responsibilities.

And now, in bringing this little book to a close, I do not apologize for its incompleteness, as its purpose is only to give hints and suggestions for further

and deeper considerations. We are in an era of world-wide change and the subjects of hygiene, sociology and psychology are being brought to bear, not only upon the betterment of the average or defective child, but, more important still, upon the prevention of abnormal children, and it is to the nervous child especially that we have endeavored to attract your attention in the hope that the various matters herein passed in rapid review before your eyes will stimulate your minds to more profound and more useful consideration of the child potentially or actively neurotic, to its ultimate benefit. Let us remember that a nervous child is ill, just as truly as if it had typhoid fever, and that if not properly understood and managed the results will be far more disastrous to the child's welfare and to society. The mentally enfeebled or disturbed child is a still greater responsibility than the nervous child. It is upon the child that we depend for the carrying on of our institutions and organizations, and for future civil and social development. The normal child is the one great legacy which we may leave the world for the betterment of humanity. This gift to the future is the highest object of procreation, the aim of true socialism, the fulfillment of the commandment to "love our neighbor," the practical solution of an altruistic ideal. As to the children of the future, we wish it could be generally accepted that it is within our power, through eugenics in the full application of the term, to give to the world a people, not only intellectually and phy-

sically superior, but morally so much better than at present that in a few generations not only insane asylums and almshouses, but also penitentiaries and reformatories would be so poorly patronized that most of them would go out of existence and the earth indeed would be a pleasant place on which to live.

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